

Introducing: CR1000 and CR3000 HMIs

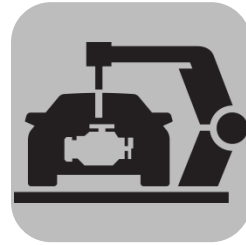


Agenda

- Industry Challenges
 - Optimizing capital investment
 - Increasing operational uptime
- Introducing: CR1000 and CR3000 HMIs and Crimson 3.1
 - Feature highlights
 - Specifications, regulatory & certifications
- Summary
 - The Red Lion Difference



Industry Challenges

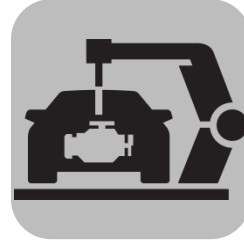


Optimizing Capital Investment

How can I cost effectively plan for future reconfiguration or feature upgrades *without* scrapping existing equipment?

In a market of ever-changing customer requirements and increasing rates of innovation, having equipment that can adapt to meet these needs is important.

Industry Challenges



Increasing Operational Uptime

How do I maximize uptime and reduce warranty expense when installing or maintaining equipment?

Even a well-designed machine will experience problems that threaten uptime, or worse yet, pose a safety risk. It's critical to reduce risk from human error and offer remote alarms, monitoring and diagnostics to reduce warranty service expense.

Feature Highlights

- More Sizes & Connectivity Options
- Mechanical Compatibility
- New Primitives, Gauges & Symbols
- Refreshed Web Server UI
- SQL Queries
- Updated Crimson Control
- Conversion & Import



More Sizes & Connectivity Options

- Widescreen models available in both CR1000 and CR3000
- USB capability for programming for all models – speeding download time versus serial connections
- Enables companies to scale their operator interfaces to meet virtually any application need

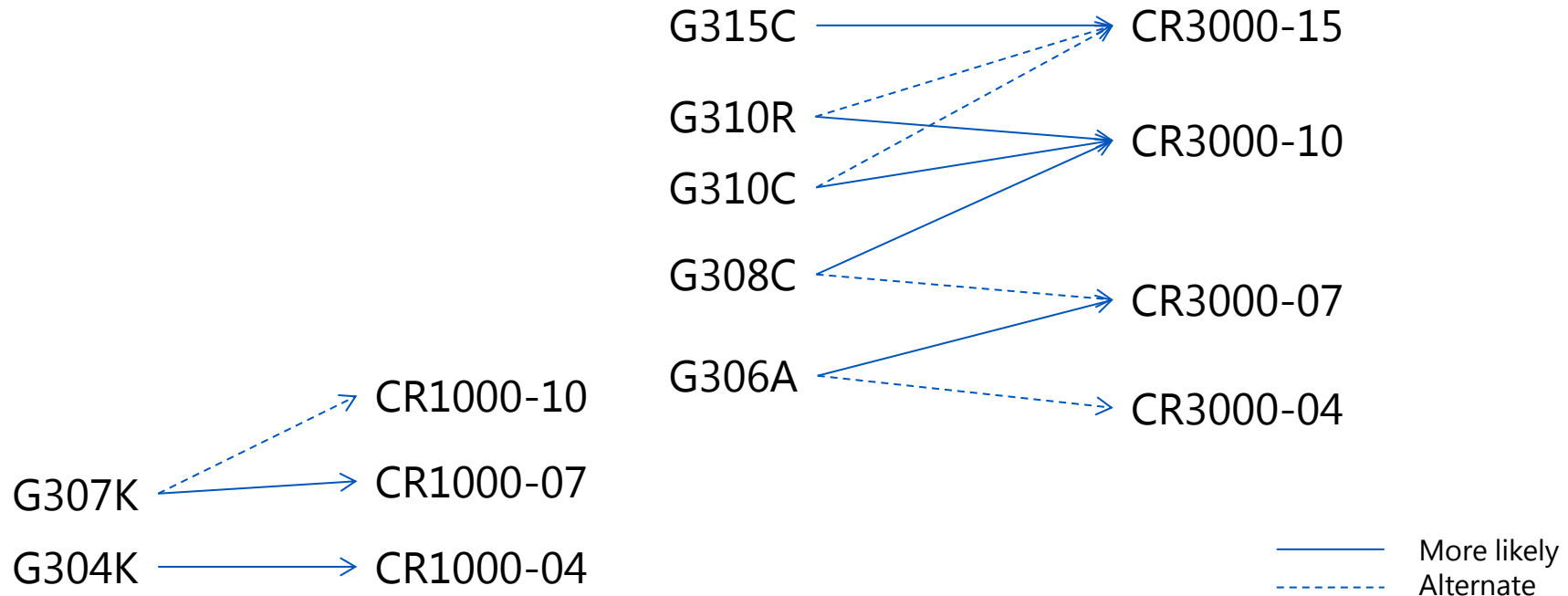


Mechanical Compatibility

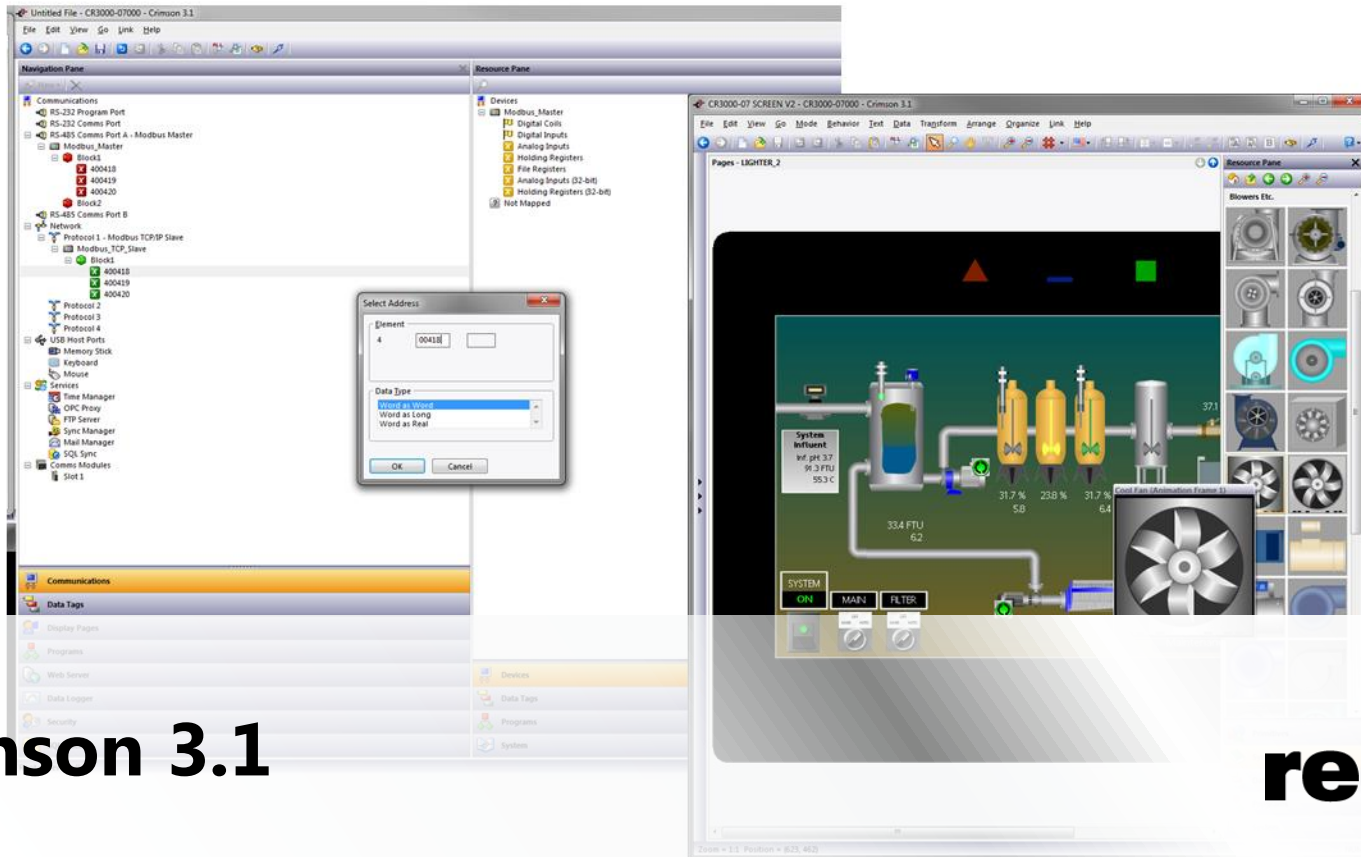
- CR1000/3000 are mechanically similar to equivalent Graphite models
- Transitioning from G3 to CR3000 will use the same adapter as G3 to Graphite
- There will be an adapter for customers transitioning from 7" Kadet to CR1000
- Since there is no 4.3" Graphite, the size/cutout for the CR1000 is the same as for a 4.3" Kadet



Migration Paths for Current Customers



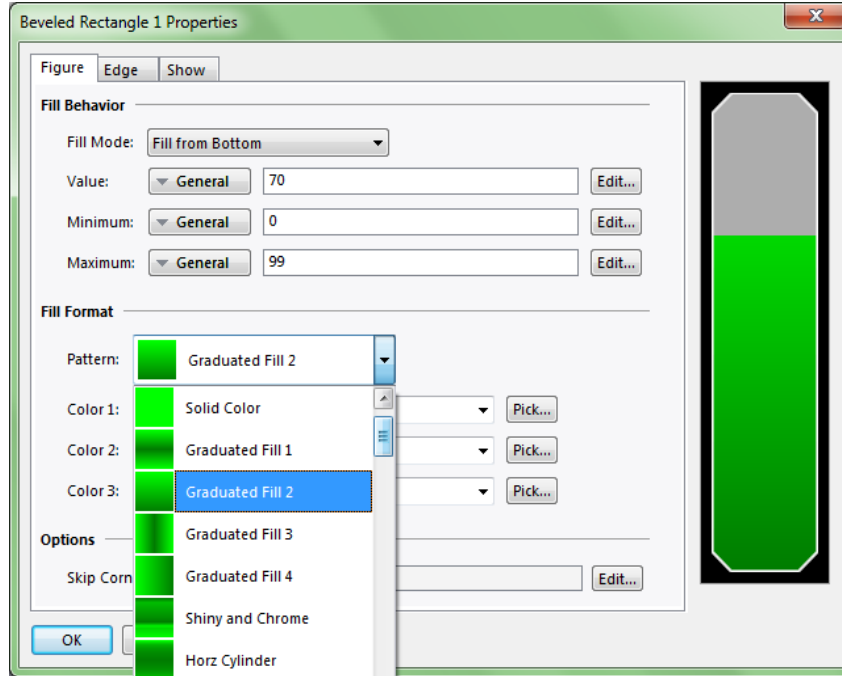
G306M – we do not offer a monochrome equivalent today.
 There are no plans at this time to replace the G303.



Crimson 3.1



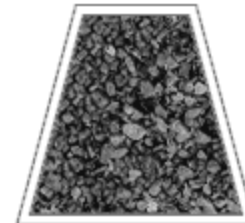
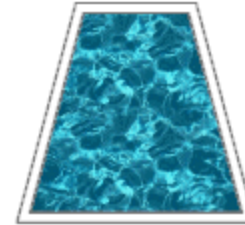
Updated Primitives



- Enhanced primitives offer smoother edges and more fill options
 - Cylindrical (horizontal & vertical)
 - "Shiny" chrome-like effect

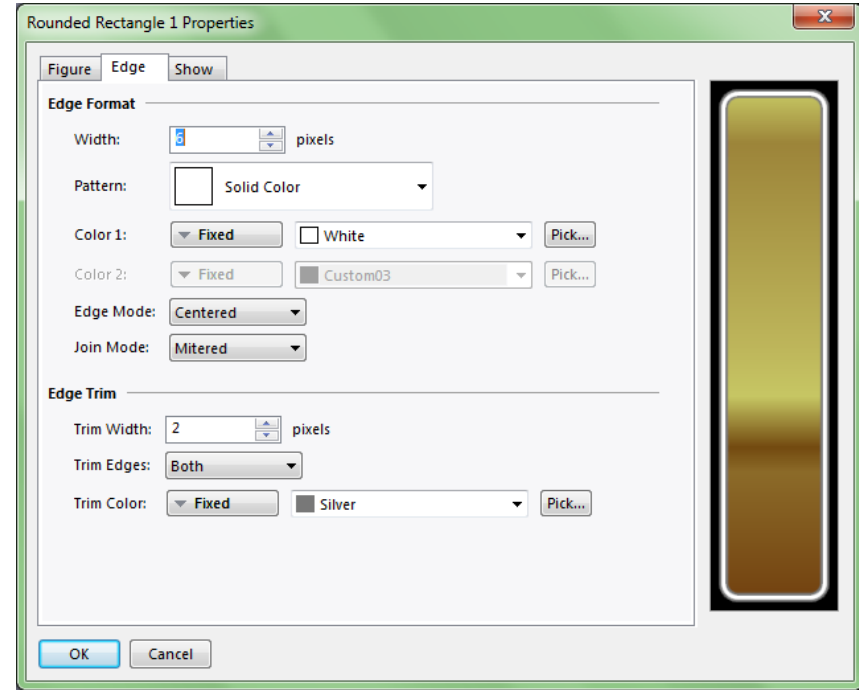
Updated Primitives

- Primitives also support textured fills, including
 - Metallic
 - Natural
 - Industrial effects

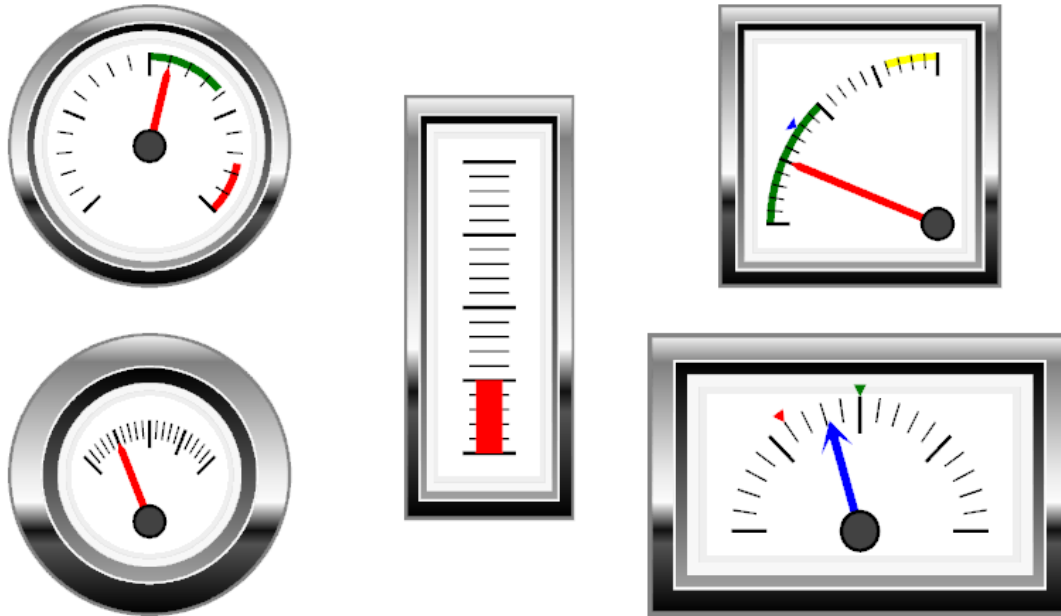


Updated Primitives

- Advanced edge settings enable users to better delineate figures
- Edge settings support anti-aliased rendering to provide a smooth appearance
- Edge width can be any thickness, especially important in high resolution displays where one pixel is quite small

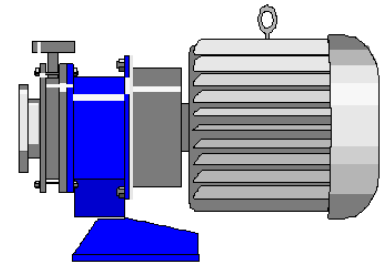
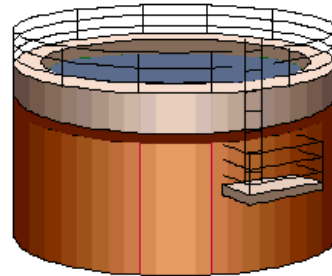
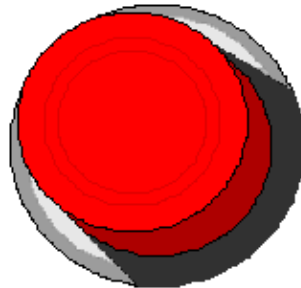
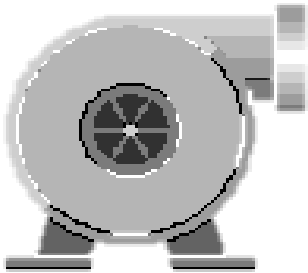


Dynamic Gauges

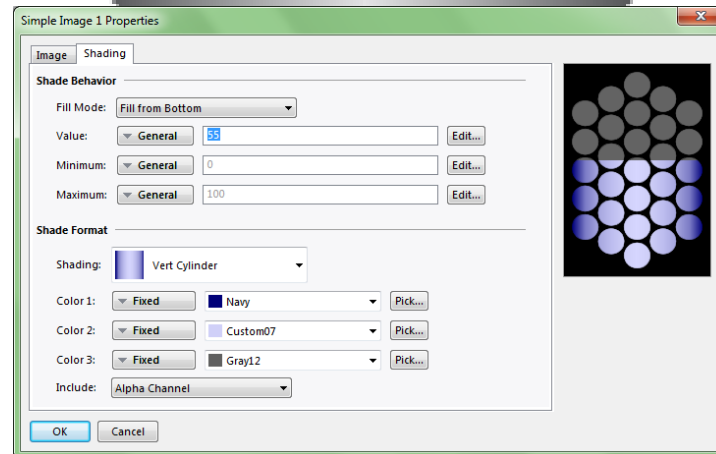
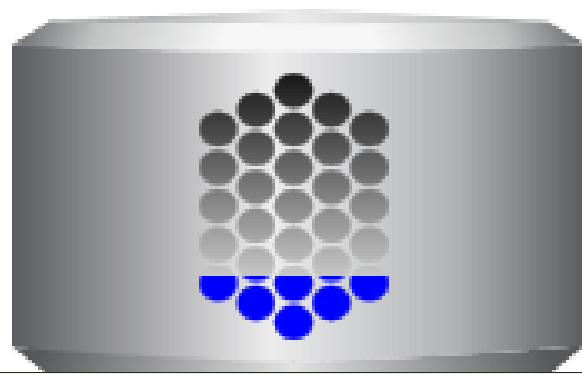
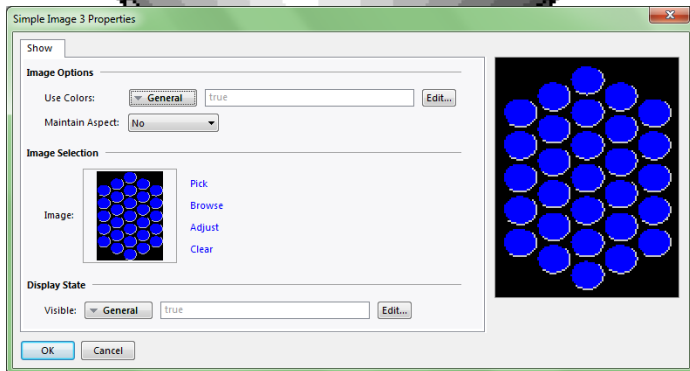
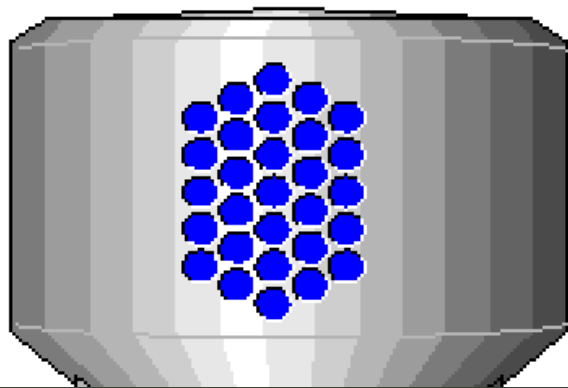


- Gauges can dynamically adjust to virtually any application need

Updated 3D Symbols



3D Symbols + Tank Cutout Fill Options



Conversion & Import

Conversion

- Shorter product lifecycles mean OEMs' end customers expect them to design & build or retrofit highly customized machines faster than ever before
- Easy-to-use Crimson® conversion utility enables users to upgrade existing databases for new displays

Import

- When direct model alternatives don't exist, Crimson 3.1 offers to emulate/approximate the screen the user is converting from
- Note
 - Button functionality does not directly convert from G3
 - The LEDs on CR1000/CR3000 are fully programmable but are not active inputs

Conversion & Import

Models

- CR1000 HMI
 - CR1000-04000 Native
- CR3000 HMI
 - CR3000-04000 Native

Import Notes

The devices have identical displays.

Example: G304K200

Crimson 3.1 automatically recommends HW models best suited for the opened 3.0 database

Crimson 3.1 offers a brief explanation of the changes made to best approximate the previous display

Models

- CR3000 HMI
 - CR3000-10000
 - 800x600 Scaled
 - 800x600 Centered
 - 640x480 Emulated
 - CR3000-07000
 - 800x480 Centered
- Graphite HMI
 - G07 Centered
 - G09 Centered

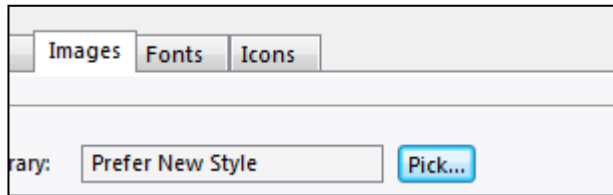
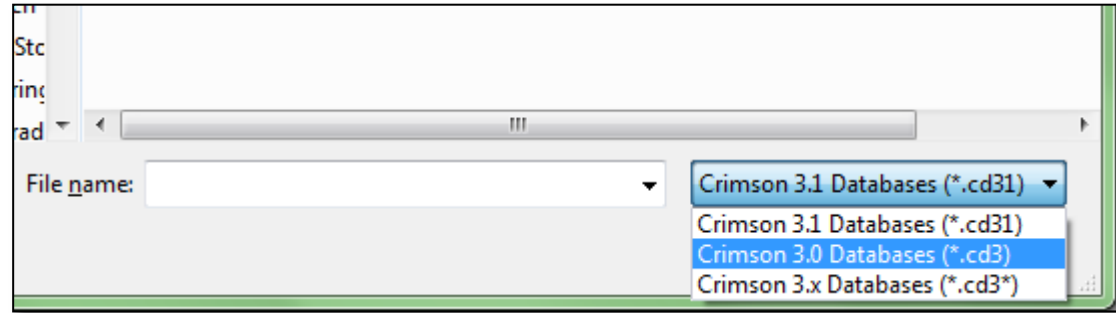
Import Notes

Upon import, the old pages will be enlarged by a factor of 125% with fonts being substituted with larger fonts where possible. The page will occupy all of the new device's display.

Example: G308

Transform Existing Pages in Two Steps

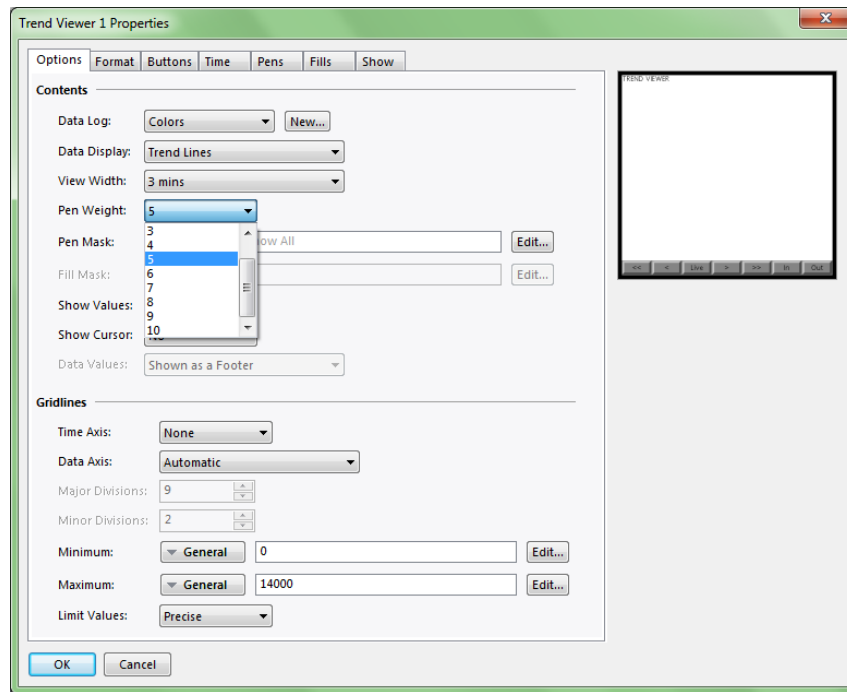
Open a Crimson 3 database from within Crimson 3.1



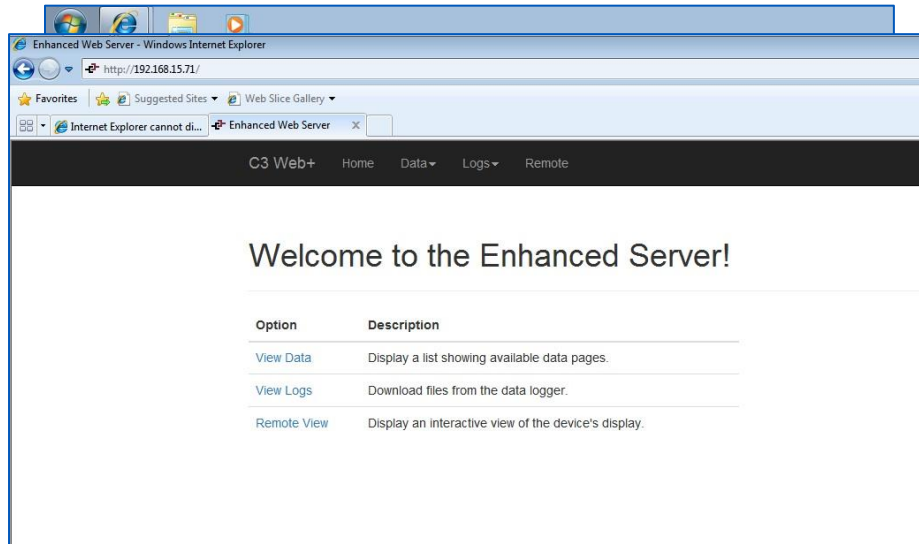
Then simply choose "*prefer new style*" on the Images tab in the Pages section of the Navigation Pane to transform screens to new primitives & symbols where a direct conversion exists

Trend Viewer Updates

- Trend viewer has more pen options, enabling greater visibility on larger screens



Refreshed Web Server UI

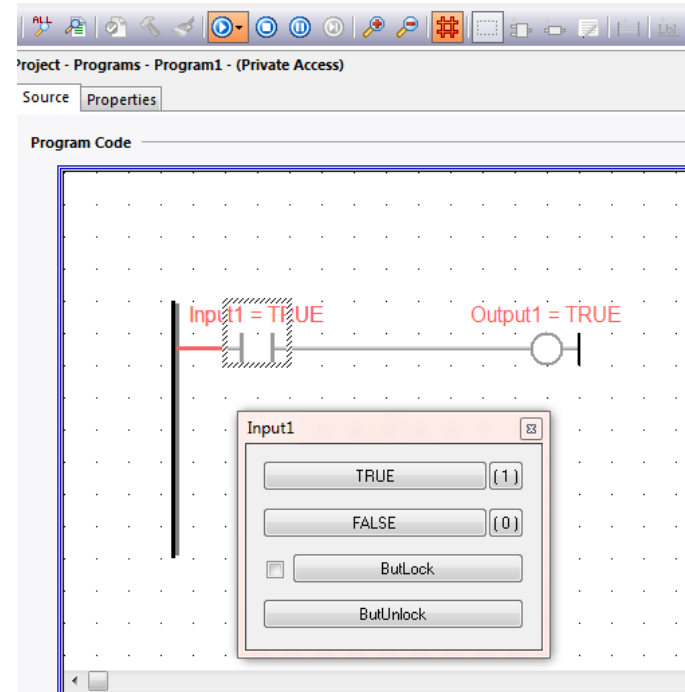


Securely monitor and control applications from remote locations

- Full screen display option
- Mobile-responsive pages
- Motion updates much faster without flicker and minimal data usage
 - Beneficial for cellular or other high-latency links
- HTTPS operation with the provision of certificates
- HTTP redirect, CSS and JavaScript supported

Updated Crimson Control

- Crimson Control (IEC 61131)
 - Online debugging
 - Initial value support for variables
 - Programs/Variables can be re-arranged in tree
 - Password-protect programs and variables



SQL Queries

- Automate downloading of data from Microsoft SQL Server to populate values in a process
- Typical applications
 - Recipes for batch applications
 - User IDs eligible to log in to equipment
 - Production expectations (KPIs) for shift
- Available for some Crimson 3 based products, as well

Crimson Feature Availability

Crimson 3

- G3 HMI
- G3 Kadet
- Data Station Plus
 - DSPZR ●
- Modular Controller
 - MCZR ●
- PTV ●
- E3 I/O
- Graphite HMI ● ●
- Graphite Controllers ● ●

Crimson 3.1

- Graphite HMI ● ●
- Graphite Controllers ● ●
- E3 I/O
- CR1000
- CR3000 ●

● Crimson Control ● SQL Queries

Feature / Benefit Summary

Feature	Benefit
More sizes and connectivity options	Machine builders can scale features and still deliver a consistent user experience across their equipment; added connectivity in the HMI means less burden on the system PLC, reducing complexity & cost
New primitives, gauges & symbols	Companies can create machine interfaces to meet expectations of a modern workforce
Conversion & import	OEMs can quickly migrate from existing Red Lion HMIs without having to fully re-create the UI, re-enter data tags or application code*

*Some changes will apply based on how the previous HMI is used.

Feature / Benefit Summary

Feature	Benefit
Refreshed web server UI	Cleaner interface, more accurate colors, more responsive (i.e. motion), easier to view on multiple platforms (full screen mode)
Updated Crimson Control functionality	Debug applications in real time



Hardware Specifications



CR1000 Specifications

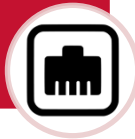
- 4.3 in
- 7 in
- 10.4 in (new)
- Up to 800x600 resolution

More display options



- 1 10/100 Ethernet port
- 1 RS-232 serial port
- 1 RS-232 / RS-485 serial port
- 1 USB device port for upload/download

Increased connectivity



- All polycarbonate housing with rugged IP66, NEMA 4X front panel
- Real Time Clock with battery back up

Industrial reliability



- Powerful ARM9 CPU
- SD card for database upload/download
- Configured using Crimson® 3.1 software

Performance without compromise



Feature Comparison

G3 Kadet

- **Display**
 - 4.3 and 7 inch
 - 3 front panel LED indicators
 - Up to 800x480 resolution
- **Connectivity***
 - 1 10/100 Ethernet port
 - 1 RS-232 serial port
 - 2 RS-422/RS-485 serial ports
- **Ratings**
 - IP65 NEMA 4X front panel
- **Other Features**
 - SD card for database upload/download
 - Configured using Crimson® software

CR1000

- **Display**
 - 4.3, 7 and 10.4 inch
 - 16M colors
 - Up to 800x600 resolution
- **Connectivity**
 - 1 10/100 Ethernet port
 - 1 RS-232 serial port
 - 1 RS-232 / RS-485 serial port
 - 1 USB device port for upload/download
- **Ratings**
 - IP66 NEMA 4X front panel
- **Other Features**
 - Powerful ARM9 CPU
 - SD card for database upload/download
 - Configured using Crimson® 3.1 software

CR3000 Specifications

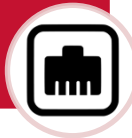
- 4.3 in
- 7 in
- 10.4 in
- **15 in**
- **Up to 1024x768 resolution**

Wider range of display options



- **2** 10/100 Ethernet ports*
- **2** RS-232 serial ports
- **2 USB host ports**
- **2** RS-232 / RS-485 serial ports*
- 1 USB device port for upload/download
- **Expansion port for select add-on network modules**

Expandable connectivity



- All polycarbonate housing with rugged IP66, NEMA 4X front panel
- Real Time Clock with battery back up

Industrial reliability



- Powerful ARM9 CPU
- **Web server**
- SD card for **data logging** and database upload/download
- Configured using next-gen Crimson® software

Added performance and features



Feature Comparison

G3

- **Display**
 - 6, 8, 10 and 15 inch
 - Dedicated menu and 7 soft keys
 - 3 front panel LED indicators
 - Up to 1024x768 resolution
- **Connectivity****
 - 1 10/100 Ethernet port
 - 2 RS-232 serial ports
 - 1 USB host port
 - 1 RS-422/RS-485 serial port
 - 1 USB device port for upload/download
- **Ratings**
 - IP66 NEMA 4X front panel
- **Other Features**
 - 32-bit ColdFire CPU
 - Web server
 - Compact flash card for data logging and database upload/download
 - Configured using Crimson® software

CR3000

- **Display**
 - 4.3, 7, 10 and 15 inch
 - 16 M colors
 - Up to 1024x768 resolution
- **Connectivity**
 - 2 10/100 Ethernet ports*
 - 2 RS-232 serial ports
 - 2 USB host ports
 - 2 RS-232 / RS-485 serial ports*
 - SD Card support up to 4G
 - 1 USB device port for upload/download
 - Expansion port for select add-on network modules
- **Ratings**
 - IP66 NEMA 4X front panel
- **Other Features**
 - Powerful ARM9 CPU
 - Web server
 - SD card for data logging and database upload/download
 - Configured using Crimson® 3.1 software

Feature Comparison

CR1000

- **Display**
 - 4.3, 7 and 10.4 inch
 - 16M colors
 - Up to 800x600 resolution
- **Connectivity**
 - 1 10/100 Ethernet port
 - 1 RS-232 serial port
 - 1 RS-232 / RS-485 serial port
 - 1 USB device port for upload/download
- **Ratings**
 - IP66 NEMA 4X front panel
- **Other Features**
 - Powerful ARM9 CPU
 - SD card for database upload/download
 - Configured using Crimson® 3.1 software

CR3000

- **Display**
 - 4.3, 7, 10 and 15 inch
 - 16 M colors
 - Up to 1024x768 resolution
- **Connectivity**
 - 2 10/100 Ethernet ports*
 - 2 RS-232 serial ports
 - 2 USB host ports
 - 2 RS-232 / RS-485 serial ports*
 - SD Card support up to 4G
 - 1 USB device port for upload/download
 - Expansion port for select add-on network modules
- **Ratings**
 - IP66 NEMA 4X front panel
- **Other Features**
 - Powerful ARM9 CPU
 - Web server
 - SD card for data logging and database upload/download
 - Configured using Crimson® 3.1 software

Regulatory & Certifications



RoHS Compliant



FCC



Conformité
Européene



Class 1 Div 2

What's in a Part Number?

<u>PP</u>	<u>MMMM</u>	<u>DD</u>	<u>xxx</u>	<u>yy</u>	<u>S</u>	<u>E</u>	<u>Z</u>
Prefix	Model/ Performance	Display Size	Reserved	Reserved	# of Serial Ports	# of Ethernet Ports	Reserved
CR Crimson	1000 Entry Level 3000 Standard	04 - 4.3" Wide 07 - 7" Wide 10 - 10.4" 15 - 15"					

CR3000-10000-00420

- Crimson based
- Standard HMI
- 10.4 inch display
- **Four** serial ports
- **Two** Ethernet ports



CR1000 and CR3000 Models

Model Number	Size (in)	Pixels	Serial	Ethernet	USB Host	Data Logger & Web Server
CR1000-04000-00210	4.3 wide	480x272	2	1	0	No
CR1000-07000-00210	7 wide	800x480	2	1	0	No
CR1000-10000-00210	10.4	800x600	2	1	0	No
CR3000-04000-00310	4.3 wide	480x272	3	1	1	Yes
CR3000-07000-00420	7 wide	800x480	4	2	2	Yes
CR3000-10000-00420	10.4	800x600	4	2	2	Yes
CR3000-15000-00420	15	1024x768	4	2	2	Yes

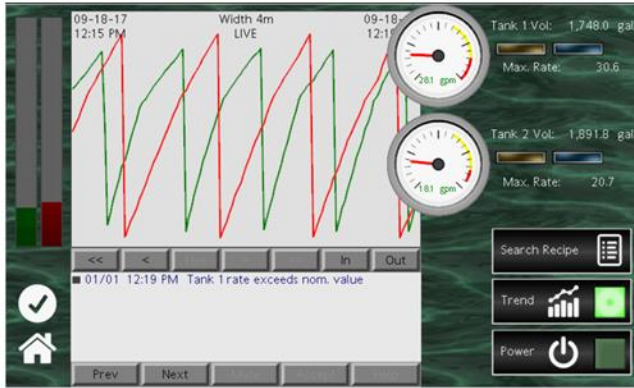
NOTE: Orderable part numbers will exclude the "-"

CR1000-04000-00210 becomes CR10000400000210

Our HMI Portfolio



	CR1000	CR3000	Graphite
Enclosure	Polycarbonate	Polycarbonate	Metal
Shock (g)	30	30	40
Vibration (g)	2	2	4
Min Temp (deg C)	-10	-10	-20
Max Temp (deg C)	50	50	60
Outdoor models available	N	N	Y
Front panel rating	IP66	IP66	IP66
IEC 61131 Control	N	(future)	with module
Data Logging	N	Y	Y
Web Server	N	Y	Y
IO Expansion	E3	E3	with module or E3
Certifications	UL	UL, UL Haz	UL, UL Haz, ABS, ATEX, IECEx



Summary

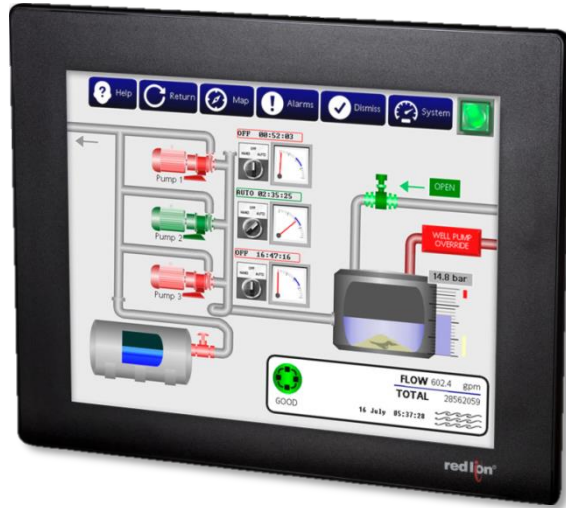
The Red Lion Difference



CR1000, CR3000 and Crimson 3.1

- More sizes and connectivity options
- Conversion & import tools available
- New primitives, gauges & symbols
- Modern, responsive web server
- Updated Crimson Control functionality for Graphite customers

Optimizing Capital Investment



Red Lion HMIs communicate with over 300+ protocols, with some executing as many as 20 protocol conversions simultaneously.

The Red Lion Difference

- Red Lion's protocol driver library ensures your capital investment stays relevant & connected for years to come
- The drag-and-drop simplicity of protocol conversion in Crimson® 3.1 enables you to quickly respond in a rapidly changing world without significant and costly redevelopment

Increasing Operational Uptime



Added connectivity in the HMI means less burden on the system PLC, reducing complexity & cost

The Red Lion Difference

- A breadth of HMI options enables you to deliver a consistent user experience across platforms
 - Train new operators faster with greater comprehension
- Features like data logging and web serving enable you to evaluate machine operation and offer value-added service recommendations like preventive maintenance

Thank you. Questions?

For more information

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