



Graphite® Control Platform

Graphite® Control Platform

- Introduction
- Features & Benefits
 - Hardware
 - Software
- Model Numbers
- Where to Sell?

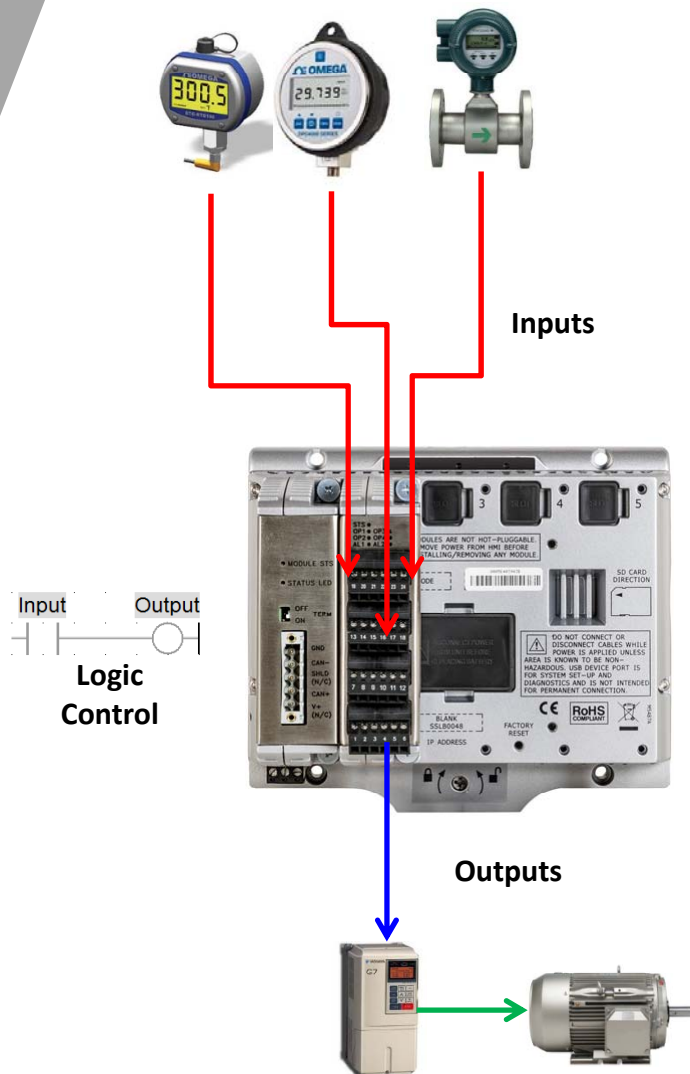


Graphite® Control Platform

- **What:** new automation offerings
 - Graphite Core Controllers
 - Graphite Crimson Control Module (for use with Graphite HMIs)
 - Graphite Expansion Racks
- **When:** October 18, 2016
- **Why:** adding a control engine to the Graphite platform can help reduce costs and complexity for customer applications that require rugged industrial controllers with or without a display



Graphite® Control Platform



- Rugged industrial controller or Graphite HMI running an industry-standard IEC 61131 control engine for doing logic control like PLCs or RTUs
- Offers all the networking, protocol conversion, industrial drivers, data logging and web server just like other Red Lion automation products





Features & Benefits

Graphite® Core Controller



- Rugged controller with built-in Crimson® Control engine
- Configured using Crimson 3.0 software with Crimson Control functionality
- Works with all existing Graphite I/O and communications plug-in modules
- -40° to 70°C wide operating temperature
- Communicates with over 300 industrial protocols
- Built-in data logging and webserver
- CE, UL and cUL

All-in-one logic control and networking for harsh environments



Graphite® Core Controller

3 Programmable LED Indicators

Lithium Battery (Covered)

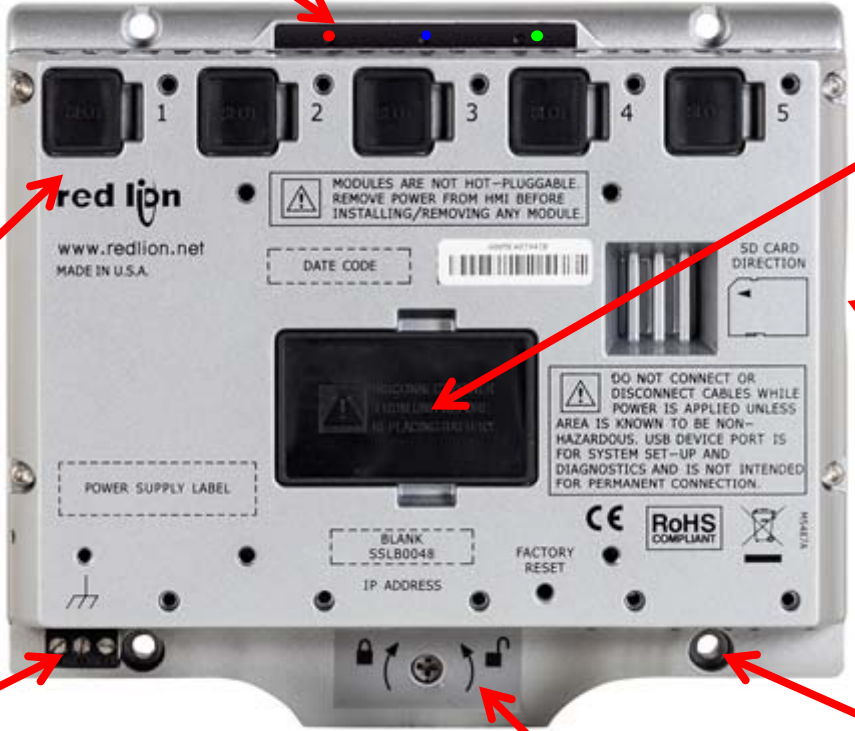
5 Slots for Graphite Modules

SD Card Slot

10-30VDC Power

Mounting Hole

Easy DIN Rail mounting and removal

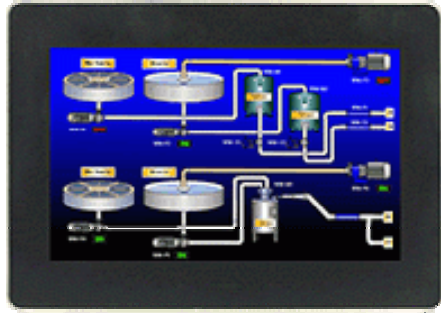


Graphite® Core Controller



**Mix and match
Graphite modules
as needed**

Graphite® Crimson® Control Module



- Seamlessly turn any new or existing Graphite HMI into a controller with add on Crimson Control Module
- Develop IEC 61131 control programs within existing or create all new databases with Crimson software
- Easily mounts to the back of the Graphite HMI or in an Expansion Rack
- Use Crimson software to identify which slot module occupies – no other configuration is required

Graphite[®] Expansion Racks



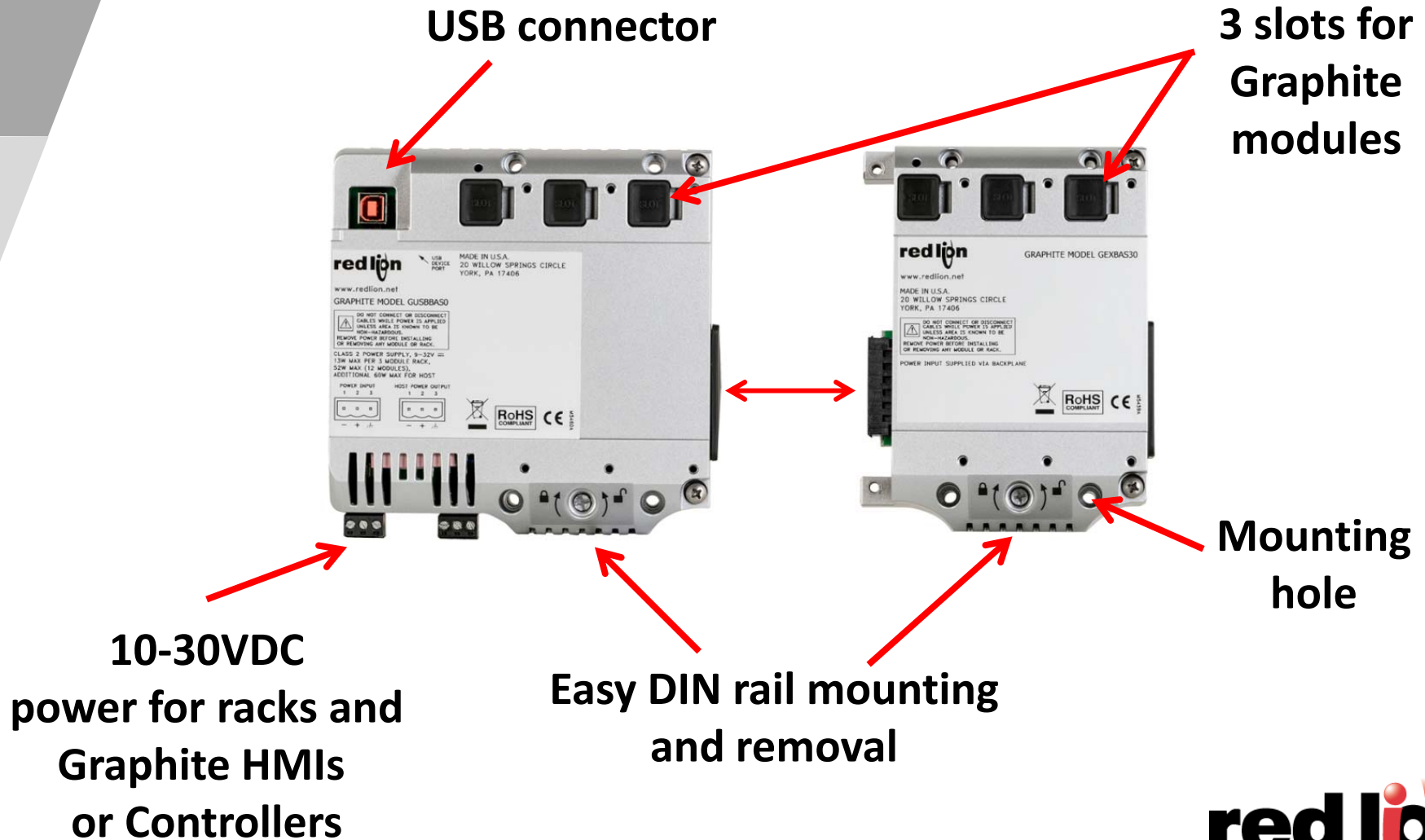
Wide Rack



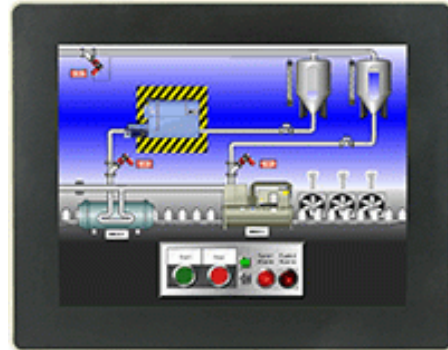
Standard Rack

- Easily expands the number of Graphite modules on HMIs or Core Controller without the need for other types of remote I/O products
- Simplifies wiring by panel mounting all Graphite modules
- Supports -40° to 75°C wide operating temperature range
- Requires wide rack and up to three standard racks
- Connects using USB cable

Graphite® Expansion Racks



Graphite® Expansion Racks



USB
Connector



Remote mount up to 12 modules



Graphite® Expansion Racks



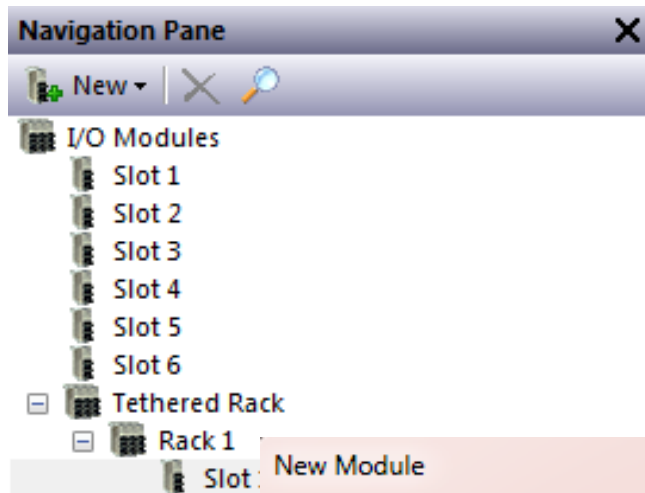
USB
Connector



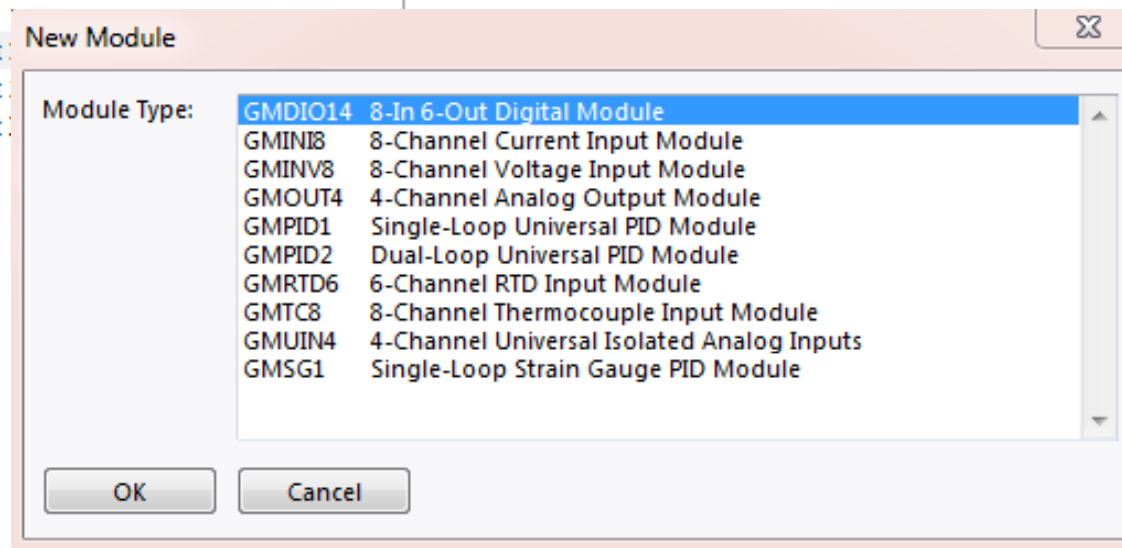
Expand up to an additional 12 modules



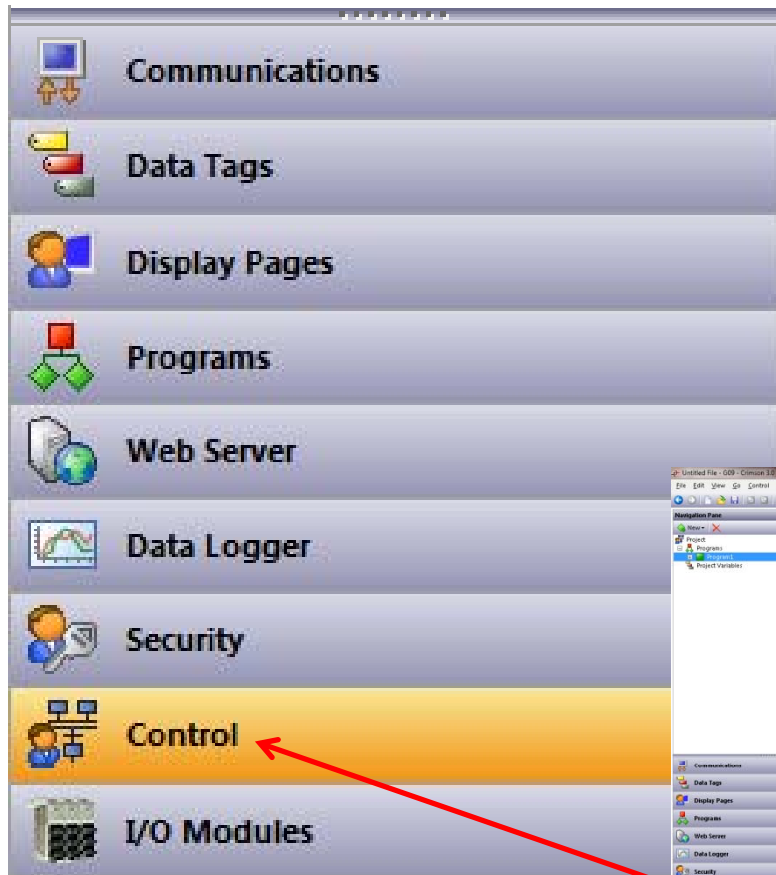
Expansion Rack Configuration



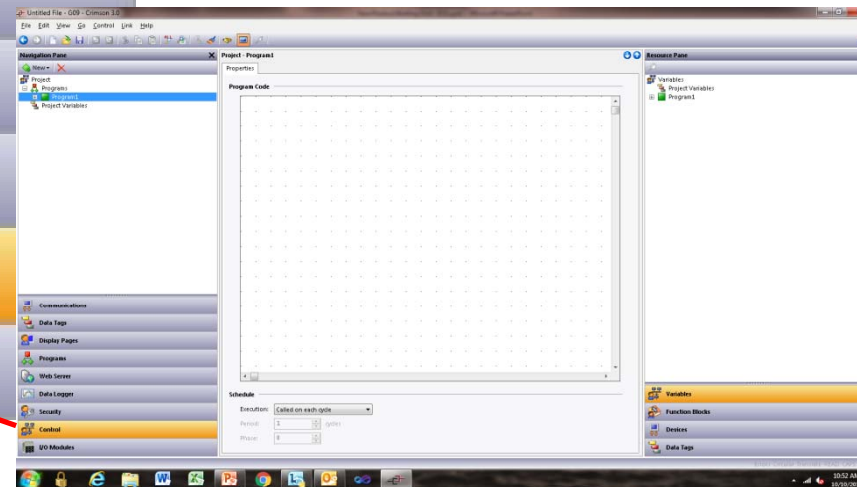
- Expansion Racks are tethered to Graphite® HMI or Graphite Core Controller
- Add rack in Crimson Navigation Pane and pick appropriate Graphite module



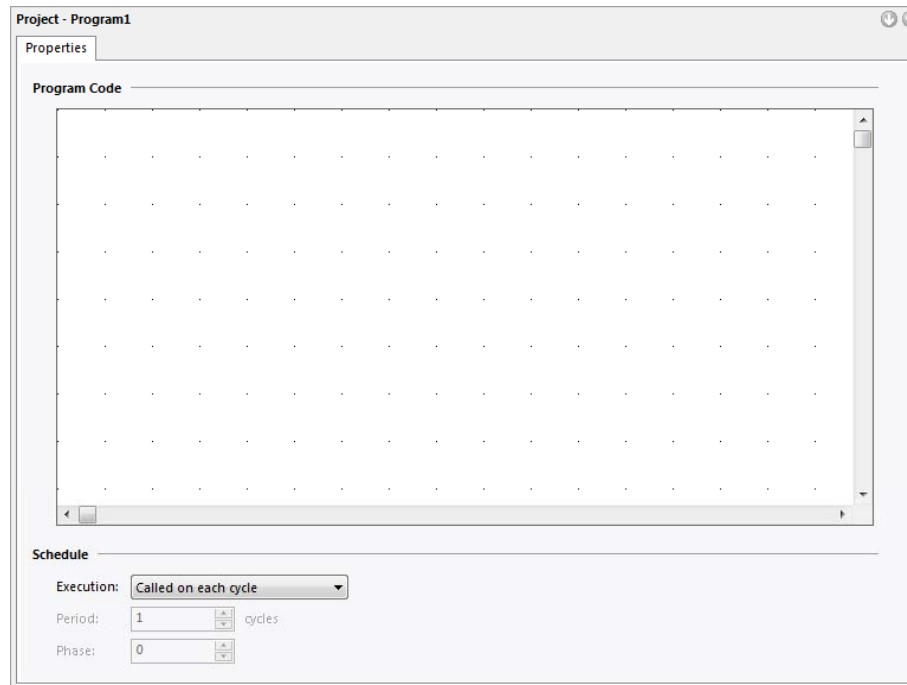
Crimson® Control



- **New Crimson Navigation Pane category – Control**
- **Is shown when choosing a Graphite Core Controller or any Graphite HMI**

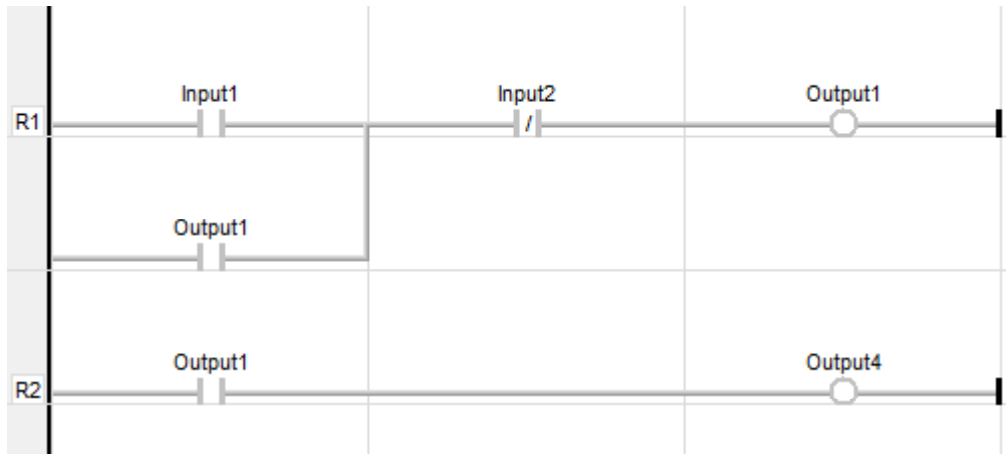


Crimson® Control

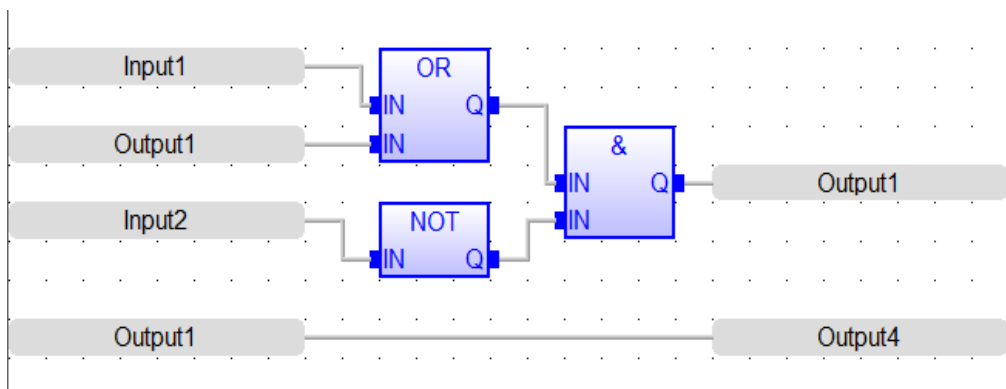


- **Program Code Editing Pane opens in central portion of the window after clicking on Control bar**
- **Program Code Editing Pane is used to develop logic control code using any one of four IEC 61131 programming languages**
- **Simply download database to target device**

IEC 61131 Programming Languages



■ Ladder Logic



■ Function Block

IEC 61131 Programming Languages

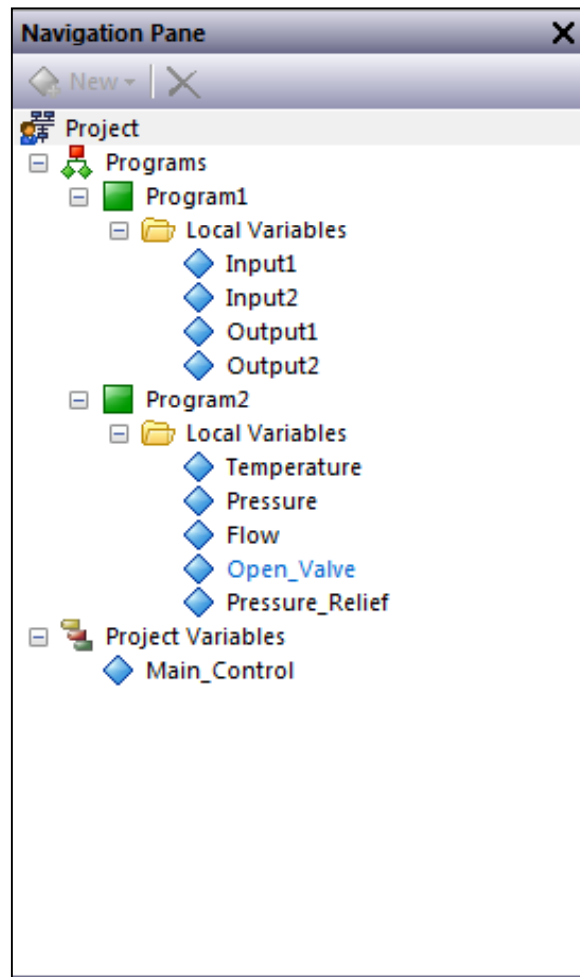
```
1 Output1 := ( ( Input1 OR Output1 ) & NOT Input2 );  
2 Output4 := Output1;
```

- **Structured Text**

```
1 BEGIN_IL  
2   LD   Input1  
3   OR   Output1  
4   &N   Input2  
5   ST   Output1  
6   LD   Output1  
7   ST   Output4  
8 END_IL
```

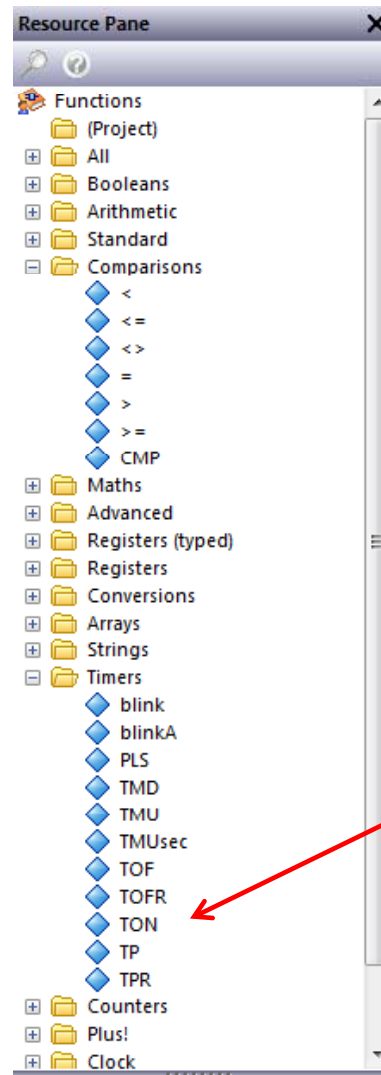
- **Instruction List**

Crimson® Control



- Top section of Navigation Pane for Control category shows how control projects are developed
- Projects can contain multiple programs as needed for each application
- Each program can be any one of four IEC 61131 language types
- Projects and programs have control variables that are mapped to real or virtual I/O, system variables or Crimson Data Tags

Crimson® Control



- Top section of Resource Pane for Control category shows the list of function blocks available
- Show function block help info by simply right clicking mouse on any item in the tree

TON

Function Block - On timer.

INPUTS

IN : BOOL Timer command.
PT : TIME Programmed time.

OUTPUTS

Q : BOOL Timer elapsed output signal.
ET : TIME Elapsed time.

TIME DIAGRAM

Crimson® Control

ADLD0100

CRIMSON 3 CONTROL REFERENCE MANUAL

- **Crimson Control Reference Manual added to Crimson 3.0 software**
- **Details on how to use each function block in the four IEC 61131 programming languages**



Crimson® Control

- **Integrated into Crimson® 3.0 Software**
 - No need for add-on or special extra software reduces complexity
- **Available for download from the Red Lion website**
 - Start developing projects today
- **Industry-standard IEC 61131 programming languages**
 - No need to learn special programming languages which can lead to faster project development
- **All-in-one solution for control, networking and data visualization**
 - Combines industry-standard control with Red Lion's protocol conversion support for over 300 industrial drivers, data logging and web server with and without display



Model Numbers

Model Numbers

MODEL NUMBER	DESCRIPTION
GRAC00C5	Graphite Core Controller, 5 Port Self-contained Rack

CRIMSON CONTROL MODULE

MODEL NUMBER	DESCRIPTION
GMCC0000	Graphite Module, enables IEC 61131 control capabilities via Crimson Control

EXPANSION RACKS

MODEL NUMBER	DESCRIPTION
GEXRACK1	Graphite Wide Expansion Rack for Modules
GEXRACK2	Graphite Standard Expansion Rack for Modules
CBLUSBM0	USB Tethering Cable, 0.5 M Metal Jacketed
CBLUSBM1	USB Tethering Cable, 1 M Metal Jacketed
CBLUSBM2	USB Tethering Cable, 2 M Metal Jacketed