

# Unitronics 2011 Product Overview



## PLC + Display **in One Unit**

Economy Automation with power and communication



**KLINKMANN**

[www.klinkmann.com](http://www.klinkmann.com)



# PLC + display in One Unit

with remote communication

**Unitronics designs, manufactures, and markets quality PLCs for the global market.**

Easy to use, efficient, and affordable, our products have been automating processes, systems, and stand-alone applications since 1989.

We maintain more than 140 distributors in over 50 countries around the globe, enabling our customers to purchase our products with local marketing support.

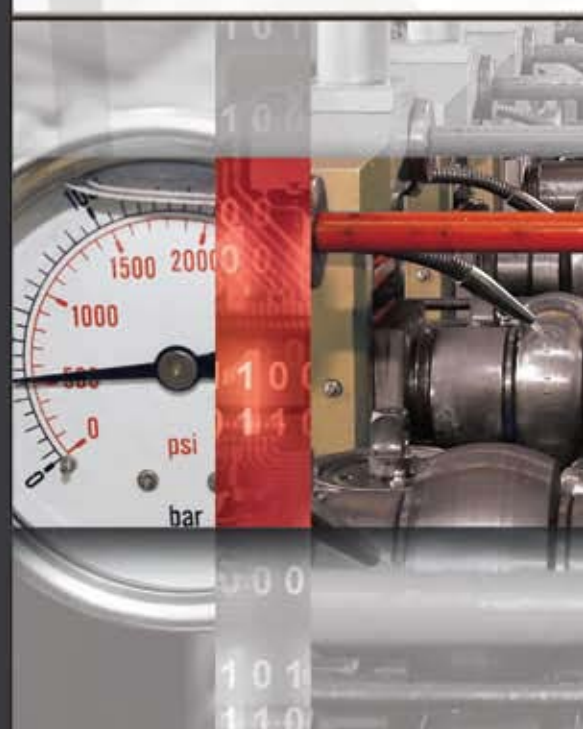
Unitronics' field-proven PLCs automate tens of thousands of installations in diverse fields: petrochemical, automotive, food processing, plastic & textile, energy & environment, water & waste water management—anywhere automated processes are required.

Our clients include: Coca-Cola, General Motors, Michelin, Tupperware, Intel, Bayer, Colgate-Palmolive, Bosch-Rexroth, ABB, Land Instruments, Mercedes, Agfa, Tyson Foods, Pirelli, Fiat, Samsonite.

## PLC + display = OPLC™

The advantages of  
Complete Control:

- Reduced programming—a single programming environment for both PLC and HMI applications
- Less wiring, less space required
- Saves I/O points and reduces hardware
- Panel-PLC communication is built-in
- Interfaces to modems and networks



# Vision1040™ Color OPLC™ - 10,4”

## Color Vision1040™ Series Featuring:

### PLC

- I/O options include high-speed, temperature & weight measurement
- Auto-tune PID, up to 24 independent loops
- Recipe programs and datalogging via Data Tables
- Micro SD card - log, backup, clone, & more
- Time-based control in 3 clicks

### Communication

- Ethernet via TCP/IP
- Web server: Use built-in HTML pages, or design complex pages to view and edit PLC data via the Internet
- Send e-mail function
- SMS messaging
- GPRS/GSM/CDMA enabled
- Remote Access utilities
- MODBUS protocol support

### HMI

- Up to 1024 user-designed screens
- 500 images per application
- HMI graphs - color-code Trends
- Built-in alarm screens
- Text String Library—easy localization
- Troubleshoot via the HMI panel—no PC needed
  
- CANbus: CANopen, UniCAN, SAE J1939 & more
- DF1 Slave
- Ports: supplied with 2 isolated RS232/RS485 and 1 CANbus; 1 USB programming port; 1 port may be added for serial/Ethernet



... An advanced PLC with an integrated color Touchscreen,  
plus Snap-in and Expansion I/Os ...

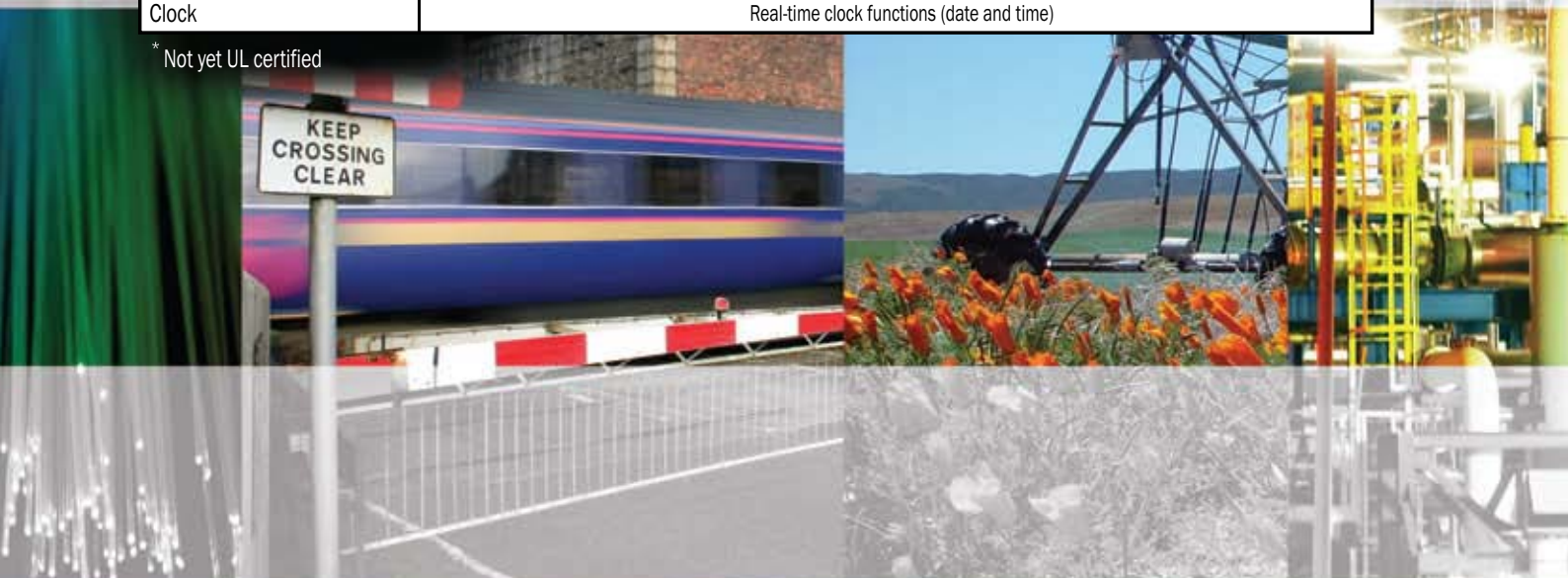
CE/UL

## Get the big picture - Vision1040™ PLC & 10.4" touchscreen HMI

New!\*

Article Number	V1040-T20B*
<b>I/O Options</b>	
Snap-in I/O Modules	Plug these modules directly into the back of the Vision unit to create a self-contained PLC with up to 62 I/Os. Inputs may include Digital, Analog and Temperature Measurement. Outputs may include Transistor, Relay or Analog (sold separately).
I/O Expansion	Local or Remote I/Os may be added via expansion port or via CANbus
<b>Program</b>	
Application Memory	Application Logic: 2MB • Images: 32MB • Fonts: 1MB
Scan Time	9µsec per 1K of typical application
Memory Operands	8192 coils, 4096 registers, 512 long integers (32 bit), 256 double words (32 bit unsigned), 64 floats, 384 timers (32 bit), 32 counters Additional non-retainable operands: 1024 X-bits, 512 X-integers, 256 X-long integers, 64 X-double words
Data Tables	120K dynamic RAM data (recipe parameters, datalogs, etc.), up to 256K Flash data
SD Card (Micro)	Store datalogs, Alarm History, Data Tables, Trend data, export to Excel • Back up Ladder, HMI & OS, clone PLCs
USB	1 USB programming port (Mini-B)
Enhanced Features	Trends: graph any value and display on HMI • Built-in Alarm management system • String Library: instantly switch HMI language
<b>Operator Panel</b>	
Type	TFT LCD
Display Backlight Illumination	white LED
Colors	65,536 colors, 16-bit resolution • Brightness- Adjustable via touchscreen or software
Display Resolution & Size	800 x 600 pixels (SVGA), 10.4"
Touchscreen	Resistive, Analog
<b>Keyboard</b>	
Number of keys	9 programmable function keys
<b>General</b>	
Power Supply	12/24VDC
Battery	7 years typical at 25 °C, battery back-up for all memory sections and RTC
Environment	IP65/NEMA4X (when panel mounted)
Clock	Real-time clock functions (date and time)

\* Not yet UL certified



# Vision570™/560™ Color OPLC™ - 5,7”

## Color Vision570™ / Vision560™ Series Featuring:

### PLC

- I/O options include high-speed, temperature & weight measurement
- Auto-tune PID, up to 24 independent loops
- Recipe programs and datalogging via Data Tables
- SD card - log, backup, clone, & more
- Time-based control in 3 clicks

### Communication

- Ethernet via TCP/IP
- Web server: Use built-in HTML pages, or design complex pages to view and edit PLC data via the Internet
- Send e-mail function
- SMS messaging
- GPRS/GSM/CDMA enabled

### HMI

- Up to 1024 user-designed screens
- 500 images per application
- HMI graphs - color-code Trends
- Built-in alarm screens
- Text String Library—easy localization
- Virtual alpha-numeric keypad
- Troubleshoot via the HMI panel—no PC needed
- Remote Access utilities
- MODBUS protocol support
- CANbus: CANopen, UniCAN, SAE J1939 & more
- DF1 Slave
- Ports: supplied with 2 isolated RS232/RS485 and 1 CANbus; 1 port may be added for serial/Ethernet





... Our Color PLCs  
bring your system to life ...



## An advanced PLC with an integrated color Touchscreen, plus Snap-in and Expansion I/Os (up to 1000)

New!\*

Article Number			
<b>I/O Options</b>			
Snap-in I/O Modules	Plug these modules directly into the back of the Vision unit to create a self-contained PLC with up to 62 I/Os. Inputs may include Digital, Analog and Temperature Measurement. Outputs may include Transistor, Relay or Analog (sold separately).		
I/O Expansion	Local or Remote I/Os may be added via expansion port or via CANbus		
<b>Program</b>			
Application Memory	Application Logic: 2MB • Images: 12MB • Fonts: 1MB		
Scan Time	9µsec per 1K of typical application		
Memory Operands	8192 coils, 4096 registers, 512 long integers (32 bit), 256 double words (32 bit unsigned), 64 floats, 384 timers (32 bit), 32 counters Additional non-retainable operands: 1024 X-bits, 512 X-integers, 256 X-long integers, 64 X-double words		
Data Tables	120K dynamic RAM data (recipe parameters, datalogs, etc.), up to 256K Flash data		
SD Card	Store datalogs, Alarm History, Data Tables, Trend data, export to Excel • Back up Ladder, HMI & OS, clone PLCs		
Enhanced Features	Trends: graph any value and display on HMI • Built-in Alarm management system • String Library: instantly switch HMI language		
<b>Operator Panel</b>			
Type	TFT LCD		
Display Backlight Illumination	white LED	Fluorescent lamp	white LED
Colors	65,536 colors, 16-bit resolution • Brightness- Adjustable via touchscreen or software		
Display Resolution & Size	320 x 240 pixels (QVGA), 5.7"		
<b>Touchscreen</b>	Resistive, Analog		
<b>Keyboard</b>			
<b>Number of keys</b>	Virtual keyboard		24 programmable keys. Labeling options - function
General	keys or customized		
Power Supply	12/24VDC	24VDC	12/24VDC
Battery	7 years typical at 25 °C, battery back-up for all memory sections and RTC		
Environment	IP65/NEMA4X (when panel mounted)		
Clock	Real-time clock functions (date and time)		

\* Not yet UL certified



# Vision350™ Color OPLC™ - 3,5”

## Color Vision350™ Series Featuring:

### PLC

- 1024 user-designed screens and 250 images per application
- HMI graphs— color-code Trends
- Built-in alarm screens
- Text String Library— easy localization
- Troubleshoot via the HMI panel— no PC needed

### Communication

- GPRS/GSM/CDMA enabled
- Ethernet via TCP/IP
- Web server: Use built-in HTML pages, or design complex pages to view and edit PLC data via the Internet
- SMS messaging, Send e-mail function
- Remote Access utilities
- MODBUS protocol support
- CANbus: CANopen, UniCAN, SAE J1939 & more

### HMI

- I/O options include high-speed, temperature & weight measurement
- Auto-tune PID, up to 24 independent loops
- Recipe programs and datalogging via Data Tables Micro SD card - log, backup, clone, & more
- Time-based control in 3 clicks
- DF1 Slave
- Ports: supplied with 1 RS232/RS485; 2 ports may be added: 1 Serial/Ethernet and 1 CANbus



<sup>1</sup> In these models certain inputs are adaptable, and can function as either digital, analog, and in certain models also as thermocouple or PT100. Using adaptable inputs reduces the amount of free digital inputs. For example, V350-35-RA22 offers 12 digital inputs. Implementing 2 TC inputs requires 4 digital inputs, leaving 8 free.

<sup>2</sup> Certain inputs can function as high-speed counters, shaft-encoder inputs, or normal digital inputs.

<sup>3</sup> This specification depends on cable length.

<sup>4</sup> This specification depends upon driver type.

\* V350-35-TR34 & V350-35-TRA22 are not yet UL certified.

... The world's smallest PLC with an integrated  
Color Touchscreen ...



## Color it beautiful!

### Power PLC, Color Touchscreen & onboard, expandable I/Os (up to 512)

Article Number	V350-35-B1	V350-35-R2	V350-35-R34	V350-35-TR34	V350-35-R6	V350-35-RA22	V350-35-TRA22	V350-35-T2	V350-35-T38	V350-35-TA24
	No onboard I/Os	10 Digital 2 D/A Inputs <sup>1</sup> 6 Relay Outputs	20 Digital 2 D/A Inputs <sup>1</sup> 12 Relay Outputs	20 Digital 2 D/A Inputs <sup>1</sup> 8 Relay 4 High-speed Transistor Outputs	6 Digital, 2 D/A 4 Analog Inputs <sup>1</sup> 6 Relay Onputs	8 Digital 2 D/A, 2 PT100/TC/ Digital <sup>1</sup> Inputs 8 Relay 2 Analog Outputs	8 Digital, 2 D/A 2 PT100/TC/ Digital <sup>1</sup> Inputs 4 Relay, 2 Analog 4 High-speed Transistor Outputs	10 Digital 2 D/A Inputs <sup>1</sup> 12 Transistor Outputs	20 Digital 2 D/A Inputs <sup>1</sup> 16 Transistor Outputs	8 Digital 2 D/A, 2 PT100/TC/ Digital <sup>1</sup> Inputs 10 Transistor 2 Analog Outputs
<b>Inputs</b>										
Digital	None	12	22	22	8	12	12	12	22	12
HSC/Shaft-Encoder/ Max Freq. Measurer <sup>2&amp;3</sup>		3 30kHz 32-bit	3 30kHz 32-bit	3 200kHz <sup>4</sup> 32-bit	1 30kHz 32-bit	1 30kHz 32-bit	1 200kHz <sup>4</sup> 32-bit	3 30kHz 32-bit	2 30kHz 32-bit	1 30kHz 32-bit
Analog		2 10-bit, 0-10V 0-20mA 4-20mA	2 10-bit, 0-10V 0-20mA 4-20mA	2 10-bit, 0-10V 0-20mA 4-20mA	6 10-bit 2 0-10V 0-20mA, 4-20mA and 4 0-20mA 4-20mA	2 14-bit 0-10V, 0-20mA 4-20mA	2 (2 modes) Normal: 14-bit Fast: 12-bit 0-10V, 0-20mA 4-20mA and as 2 PT100/TC	2 10-bit 0-10V 0-20mA 4-20mA	2 10-bit 0-10V, 0-20mA 4-20mA	2 14-bit 0-10V, 0-20mA 4-20mA  and as 2 PT100/TC
Temperature Measurement		None	None	None	None	and as 2 PT100/TC	2 PT100/TC	None	None	
<b>Outputs</b>										
Digital		6 relay	12 relay	8 relay	6 relay	8 relay	4 relay	12 pnp	16 pnp	10 pnp
High-speed Outputs/PWM	None	None	4 npn (3 PTO) 200kHz max	None	None	4 npn (2 PTO) 200kHz max	7 0.5kHz	7 0.5kHz	5 0.5kHz	
Analog	None	None	None	None	2 12-bit 0-10V, 4-20mA	2 12-bit 0-10V, 4-20mA	None	None	2 12-bit 0-10V, 4-20mA	
<b>I/O Expansion</b>	Local or Remote I/Os may be added via expansion port or via CANbus									
<b>Program</b>										
Application Memory	Application Logic: 1MB ▪ Images: 6MB ▪ Fonts: 512K									
Scan Time	15µ sec per 1K of typical application									
Memory Operands	8192 coils, 4096 registers, 512 long integers (32-bit), 256 double words (32-bit unsigned), 64 floats, 384 timers (32-bit), 32 counters Additional non-retainable operands: 1024 X-bits, 512 X-integers, 256 X-long integers, 64 X-double words									
Data Tables	120K dynamic RAM data (recipe parameters, datalogs, etc.), up to 256K Flash data									
SD card (Micro)	Store datalogs, Alarm History, Data Tables, Trend data, export to Excel ▪ Back up Ladder, HMI & OS, clone PLCs									
Enhanced Features	Trends: graph any value and display on HMI ▪ String Library: instantly switch HMI language									
<b>Operator Panel</b>										
Type & Colors	TFT LCD ▪ 65,536 colors, 16-bit resolution ▪ Brightness- Adjustable via touchscreen or software									
Display	Resolution: 320 x 240 pixels (QVGA) ▪ Size: 3.5"									
Touchscreen	Resistive, Analog									
Keys	5 programmable keys. Labeling options- function keys, arrows, or customized									
<b>General</b>										
Power Supply	24VDC, except for V350-35-B1, which is 12/24VDC									
Battery	7 years typical at 25 °C, battery back-up for all memory sections and RTC									
Environment	IP65/NEMA4X (when panel mounted)									
Clock	Real-time clock functions (date and time)									

# Vision130™ Graphic OPLC™ - 2,4”

## Vision130™ Series Featuring:

### HMI

- 1024 user-designed screens and 400 images per application
- HMI graphs & Trends
- Text String Library— easy localization
- Troubleshoot via the HMI panel— no PC needed

### Communication

- GPRS/GSM/CDMA enabled
- Ethernet via TCP/IP
- Web server: Use built-in HTML pages, or design complex pages to view and edit PLC data via the Internet
- SMS messaging, Send e-mail function
- Remote Access utilities
- MODBUS protocol support
- CANbus: CANopen, UniCAN, J1939 & more

### PLC

- I/O options include high-speed, temperature and weight measurement
- Auto-tune PID, up to 24 independent loops
- Recipe programs and datalogging via Data Tables
- Micro SD card - log, backup, clone, and more
- Time-based control in 3 clicks
  
- DF1 Slave
- Ports: supplied with 1 RS232/RS485; 2 ports may be added: 1 Serial/Ethernet and 1 CANbus



<sup>1</sup> In these models certain inputs are adaptable, and can function as either digital, analog, and in certain models also as thermocouple or PT100. Using adaptable inputs reduces the amount of free digital inputs. For example, V130-33-RA22 offers 12 digital inputs. Implementing 2 TC inputs requires 4 digital inputs, leaving 8 free.

<sup>2</sup> Certain inputs can function as high-speed counters, shaft-encoder inputs, or normal digital inputs.

<sup>3</sup> This specification depends on cable length.

<sup>4</sup> This specification depends upon driver type.

\* V130-33-TR34 & V130-33-TRA22 & V130-33-TR6 & V130-33-TR20 Not yet UL certified.

... Complex recipe, TCP/IP environment! better use Vision130TM...

CE/UL

More power & speed in this palm-size PLC with built-in Graphic LCD display, keypad, & onboard I/Os (expandable up to 256)

New!\*

New!\*

Article Number	V130-33-B1	V130-33-TR20	V130-33-R34	V130-33-TR34	V130-33-TR6	V130-33-RA22	V130-33-TRA22	V130-33-T2	V130-33-T38	V130-33-TA24
	No onboard I/Os	10 Digital 2 D/A Inputs <sup>1</sup> 6 Relay Outputs 2 High-speed Transistor Outputs	20 Digital 2 D/A Inputs <sup>1</sup> 12 Relay Outputs	20 Digital 2 D/A Inputs <sup>1</sup> 8 Relay 4 High speed Transistor Outputs	6 Digital, 2 D/A 4 Analog Inputs <sup>1</sup> 6 Relay Onputs 2 High-speed Transistor Outputs	8 Digital 2 D/A, 2 PT100/TC/ Digital <sup>1</sup> Inputs 8 Relay 2 Analog Outputs	8 Digital, 2 D/A 2 PT100/TC/ Digital <sup>1</sup> Inputs 4 Relay, 2 Analog 4 High-speed Transistor Outputs	10 Digital 2 D/A Inputs <sup>1</sup> 12 Transistor Outputs	20 Digital 2 D/A Inputs <sup>1</sup> 16 Transistor Outputs	8 Digital 2 D/A, 2 PT100/TC/ Digital <sup>1</sup> Inputs 10 Transistor 2 Analog Outputs
<b>Inputs</b>										
Digital pnp/npn		12	22	22	8	12	12	12	22	12
HSC/Shaft-Encoder/ Max. Freq. Measure <sup>2&amp;3</sup>		3 200kHz <sup>4</sup> 32-bit	3 30kHz 32-bit	3 200kHz <sup>4</sup> 32-bit	1 200kHz <sup>4</sup> 32-bit	1 30kHz 32-bit	1 200kHz <sup>4</sup> 32-bit	3 30kHz 32-bit	2 30kHz 32-bit	1 30kHz 32-bit
Analog	None	2 10-bit, 0-10V 0-20mA 4-20mA	2 10-bit, 0-10V 0-20mA 4-20mA	2 10-bit, 0-10V 0-20mA 4-20mA	6 10-bit 2 0-10V, 0-20mA 4-20mA and 4 0-20mA 4-20mA	2 14-bit 0-10V, 0-20mA 4-20mA	2 (2 modes) Normal: 14-bit Fast: 12-bit 0-10V, 0-20mA 4-20mA	2 10-bit 0-10V 0-20mA 4-20mA	2 10-bit 0-10V, 0-20mA 4-20mA	2 14-bit 0-10V, 0-20mA 4-20mA
Temperature Measurement		None	None	None	None	and as 2 PT100/TC	and as 2 PT100/TC	None	None	and as 2 PT100/TC
<b>Outputs</b>										
Digital		6 relay	12 relay	8 relay	6 relay	8 relay	4 relay	12 pnp	16 pnp	10 pnp
High-Speed Outputs/PWM		2 npn (2 PTO) 200kHz max	None	4 npn (3 PTO) 200kHz max	2 npn (2 PTO) 200kHz max	None	2 npn (2 PTO) 200kHz max	7 0.5kHz	7 0.5kHz	5 0.5kHz
Analog		None	None	None	None	2 12-bit 0-10V, 4-20mA	2 12-bit 0-10V, 4-20mA	None	None	2 12-bit 0-10V, 4-20mA
<b>I/O Expansion</b>	Local or Remote I/Os may be added via expansion port or via CANbus									
<b>Program</b>										
Application Memory	Application Logic: 512K • Images: 256K • Fonts: 128K									
Scan Time	20µ sec per 1K of typical application									
Memory Operands	4096 coils, 2048 registers, 256 long integers (32-bit), 64 double words (32-bit unsigned), 24 floats, 192 timers (32-bit), 24 counters Additional non-retainable operands: 1024 X-bits, 512 X-integers, 256 X-long integers, 64 X-double words									
Data Tables	120K dynamic RAM data (recipe parameters, datalogs, etc.), up to 256K Flash data									
SD Card (Micro)	Store datalogs, Alarm History, Data Tables, Trend data, export to Excel • Back up Ladder, HMI & OS, clone PLCs									
Enhanced Features	Trends: graph any value and display on HMI • Built-in Alarm management system • String Library: instantly switch HMI language									
<b>Operator Panel</b>										
Type	Graphic STN LCD, white LED backlight									
Display	Resolution: 128 x 64 pixels • Size: 2.4"									
Keys	20, including 10 user labeled keys (slide kit sold separately)									
<b>General</b>										
Power Supply	24VDC, except for V130-33-B1, which is 12/24VDC									
Battery	7 years typical at 25°C, battery back-up for all memory sections and RTC									
Environment	IP65/NEMA4X (when panel mounted)									
Clock	Real-time clock functions (date and time)									

# Vision™ Graphic/Touch OPLC™

## Vision™ Series Featuring:

### HMI

- Up to 255 user-designed screens
- Hundreds of images per application
- HMI graphs & Trends
- Virtual alpha-numeric keypad (in V290 & V530)
- Troubleshoot via the HMI panel – no PC needed

### PLC

- I/O options include high-speed, temperature and weight measurement
- Auto-tune PID, up to 12 independent loops
- Recipe programs and datalogging via Data Tables
- Time-based control in 3 clicks



### Communication

- I/Ethernet via TCP/IP
- SMS messaging
- GPRS/GSM/CDMA enabled
- Remote Access utilities
- MODBUS protocol support
- CANbus: CANopen, UniCAN, CANbus Layer 2
- Ports: supplied with 1 RS232, 1 RS232/RS485 and 1 CANbus; 1 port may be added for serial/Ethernet



... Powerful communication options make the Vision OPLCs™  
the natural choice for distributed-control systems ...



Advanced PLCs with an integrated Operator Panel  
(graphic or touch), plus Snap-in & expansion I/Os (up to 316)



	Vision230™	Vision260™	Vision280™	Vision290™	Vision530™
<b>I/O Options</b>					
Snap-in I/O Modules	Plug these modules directly into the back of the Vision unit to create a self-contained PLC with up to 62 I/Os. Inputs may include Digital, Analog and Temperature Measurement. Outputs may include Transistor, Relay or Analog (sold separately)				
I/O Expansion	Local or remote I/Os may be added via expansion port or via CANbus				
<b>Program</b>					
Application Memory	1MB				
Scan Time	30µsec per 1K of typical application				
Operands	4096 coils, 2048 registers, 256 long integers (32 bit), 64 double words (32 bit unsigned), 24 memory floats, 192 timers, 24 counters				
Data Tables	120K dynamic RAM data (recipe parameters, datalogs, etc.), up to 256K Flash data				
<b>Operator Panel</b>					
Type	STN LCD	Negative blue, STN LCD	Black & White FSTN LCD		
Display Resolution & Size	128 x 64 pixels 3.2"	240 x 64 pixels 5.4"	320 x 240 pixels (QVGA), 4.7" active area	320 x 240 pixels (QVGA), 5.7" active area	
Touch Screen	None	None	Resistive, Analog		
<b>Keyboard</b>					
Number of Keys	24 user labeled keys	33 user labeled keys	27 user labeled keys	Virtual keyboard	
<b>General</b>					
Power Supply	12VDC or 24VDC				
Battery Back-up	7 years typical at 25°C, back-up for all memory sections and real-time clock (RTC)				
Environment	IP65/NEMA4X (for panel, when mounted)				
Article Number	V230-13-B20B	V260-16-B20B	V280-18-B20B	V290-19-B20B	V530-53-B20B



# Vision120™ Graphic OPLC™

## Vision™ Series Featuring:

### HMI

- Up to 255 user-designed screens
- Hundreds of images per application
- HMI graphs & Trends
- Troubleshoot via the HMI panel – no PC needed



### PLC

- I/O options include high-speed, temperature and weight measurement
- Auto-tune PID, up to 12 independent loops
- Recipe programs and datalogging via Data Tables
- Time-based control in 3 clicks

### Communication

- GPRS/GSM/CDMA enabled
- SMS messaging
- Remote Access utilities
- MODBUS protocol support
- CANbus: CANopen, UniCAN, CANbus Layer 2
- 2 RS232/RS485 built-in ports



<sup>1</sup> In these models certain inputs are adaptable, and can function as either digital, analog, and in certain models also as thermocouple or PT100. Using adaptable inputs reduces the amount of free digital inputs. For example, V120-22-UA2 offers 12 digital inputs. Implementing 2 TC inputs requires 4 digital inputs, leaving 8 free.

<sup>2</sup> Certain inputs can function as high-speed counters, shaft-encoder inputs, or normal digital inputs.

<sup>3</sup> This specification depends on cable length.

<sup>4</sup> Certain outputs can function as high-speed or PWM outputs.

... Palm-sized punch: power PLC plus graphic HMI ...



Small-and-powerful PLC with built-in Graphic LCD display, keypad, & onboard I/O (expandable up to 256)

Article Number	V120-22-R1	V120-22-R2C	V120-22-R6C	V120-22-R34	V120-22-T1	V120-22-T38	V120-22-T2C	V120-22-UN2	V120-22-UA2	V120-22-RA22
	10 Digital 1 Analog Inputs 6 Relay Outputs	10 Digital 2 Analog Inputs 6 Relay Outputs	6 Digital 6 Analog Inputs 6 Relay Outputs	20 Digital 2 D/A <sup>1</sup> Inputs 12 Relay Outputs	12 Digital Inputs 12 Transistor Outputs	22 Digital Inputs 16 Transistor Outputs	10 Digital 2 D/A <sup>1</sup> Inputs 12 Transistor Outputs	10 Digital 2 D/A/PT100/ TC <sup>1</sup> Inputs 12 Transistor Outputs	10 Digital 2 D/A/TC <sup>1</sup> Inputs 10 Transistor 2 Analog Outputs	8 Digital 2 D/A, 2 PT100/ TC/Digital <sup>1</sup> Inputs 8 Relay 2 Analog Outputs
<b>Inputs</b>										
Digital pnp/npn	10	10	6	22	12	22	12	12	12	12
HSC/Shaft-Encoder/ Max Freq. Measurer <sup>2</sup>	3 10kHz 32-bit	3 10kHz 32-bit	1 10kHz 32-bit	3 30kHz <sup>3</sup> 32-bit	2 10kHz 32-bit	2 30kHz <sup>3</sup> 32-bit	3 10kHz 32-bit	2 10kHz 32-bit	2 30kHz <sup>3</sup> 32-bit	2 30kHz <sup>3</sup> 32-bit
Analog	1 10-bit 0-10V, 0-20mA 4-20mA	2 10-bit 0-10V, 0-20mA 4-20mA	6 10-bit, 2 0-10V 0-20mA, 4-20mA and 4 0-20mA	2 10-bit 0-10V, 0-20mA 4-20mA	None	None	2 10-bit 0-10V 0-20mA 4-20mA	2 14-bit 0-10V, 0-20mA 4-20mA	2 14-bit 0-10V, 0-20mA 4-20mA	2 14-bit 0-10V, 0-20mA 4-20mA
Temperature Measurement	None	None	4-20mA None	None	None	None	None	2 PT100/TC	2 TC	and as 2 PT100/TC
<b>Outputs</b>										
Digital	6 relay	6 relay	6 relay	12 relay	12 pnp	16 pnp	12 pnp	12 pnp	10 pnp	8 relay
High-Speed Outputs/ PWM <sup>4</sup>	None	None	None	None	2, first 2 outputs can function as HSO, 0.5kHz maximum					None
Analog	None	None	None	None	None	None	None	None	2 12-bit 0-10V, 4-20mA	2 12-bit: 0-10V, 4-20mA
<b>I/O Expansions</b>										
Local or Remote I/Os may be added via expansion port or via CANbus										
<b>Program</b>										
Application Memory	448K (virtual) Ladder code capacity									
Memory Scan Time	48μ sec per 1K of typical application									
Operands	4096 coils, 2048 registers, 256 long integers (32-bit), 64 double words (32-bit unsigned), 24 floats, 192 timers (32-bit), 24 counters									
Data Tables	120K dynamic RAM data (recipe parameters, datalogs, etc.), up to 256K Flash data									
<b>Operator Panel</b>										
Type	Graphic STN LCD									
Display	Resolution: 128 x 64 pixels • Size: 2.4"									
<b>Keypad</b>										
Keys	16 keys									
<b>General</b>										
Power Supply	12/24VDC	12/24VDC	24VDC	24VDC	12/24VDC	24VDC	12/24VDC	12/24VDC	24VDC	24VDC
Battery	7 years typical at 25°C, battery back-up for all memory sections and RTC									
Environment	IP65/NEMA4X (when panel mounted)									
Clock	Real-time clock functions (date and time)									

# Jazz<sup>®</sup> Micro-OPLC™

## Jazz<sup>®</sup> series featuring:

### HMI

- Up to 60 user-designed screens
- Multilingual: supports over 15 languages & 20 graphic symbols
- Scroll between pre-programmed recipes/menus

### PLC

- Ladder Logic programming ensures functional flexibility
- Functions include: interrupt, loops, math, store & compare functions
- Time-based control in 3 clicks
- High-speed counters & PWM outputs
- Direct temperature inputs
- Auto-tune PID, up to 4 loops

### Communication<sup>2</sup>

- SMS messaging via GSM
- Remote Access utilities
- PC access via MODBUS or OPC server
- MODBUS networking



<sup>1</sup> These models comprise a total of 10/20 inputs (model-dependent). 6/16 (model-dependent) of these may be wired, in a group, as either digital npn or pnp. 2 inputs have added functionality. Both may be wired in a group as npn, pnp, or analog (voltage) inputs. Note that it is also possible to individually wire 1 input as a pnp input, and the other as an analog input. The two remaining inputs are analog (current).

<sup>2</sup> In order to download applications and enable communications, install Jazz<sup>®</sup> with the appropriate Add-on Module.

<sup>3</sup> JZ10-11-UN20 and JZ10-11-UA24 are not yet UL certified.

<sup>4</sup> Certain inputs can function as high-speed counters, or as normal digital inputs.

...Replace that “smart-relay” with a real PLC/HMI ...

CE/UL

Much more than a “smart relay”. Full-function PLC and HMI, with up to 40 onboard I/Os, all in one device

Article Number	JZ10-11-R10	JZ10-11-T10	JZ10-11-R16	JZ10-11-T17	JZ10-11-R31	JZ10-11-T40	JZ10-11-UN20 <sup>3</sup>	JZ10-11-UA24 <sup>3</sup>	JZ10-11-PT15
	6 Digital Inputs 4 Relay Outputs	6 Digital Inputs 4 Transistor Outputs	6 Digital, 2 D/A 2 Analog Inputs <sup>1</sup> 6 Relay Outputs	6 Digital, 2 D/A 2 Analog Inputs <sup>1</sup> 7 Transistor Outputs	16 Digital, 2 D/A 2 Analog Inputs <sup>1</sup> 11 Relay Outputs	16 Digital 2 D/A, 2 Analog Inputs <sup>1</sup> 20 Transistor Outputs	9 Digital, 2 D/A 1 Analog 1 PT100/TC Inputs <sup>1</sup> 5 Relay 2 Transistor Outputs	9 Digital, 2 D/A 2 Analog 2 PT100/TC Inputs <sup>1</sup> 5 Relay, 2 Analog 2 Transistor Outputs	3 Digital, 3 D/A 3 PT1000/Ni1000 Inputs <sup>1</sup> 5 Relay 1 Transistor Outputs
<b>Inputs</b>									
Digital pnp/npn	6	6	8	8	18	18	11	11	6
High-Speed Counters <sup>4</sup>	2 5kHz, 16-bit						1.5kHz, 16-bit		
Analog	None	None	2 10-bit, 0-10V and 2 10-bit, 0-20mA,	2 10-bit, 0-10V and 2 10-bit 0-20mA,	2 10-bit, 0-10V and 2 10-bit 0-20mA, 4-20mA	2 10-bit, 0-10V and 2 10-bit 0-20mA,	2 10-bit, 0-10V and 1 10-bit 0-20mA,	2 10-bit, 0-10V and 2 10-bit 0-20mA, 4-20mA	3 10-bit 0-10V
Temperature Measurement	None	None	4-20mA None	4-20mA None	None	4-20mA None	4-20mA 1 PT100/TC	2 PT100/TC	3 PT1000/Ni1000
<b>Outputs</b>									
Digital	4 relay	4 pnp	6 relay	7 pnp	11 relay	20 pnp	5 relay, 2 pnp	5 relay, 2 pnp	5 relay 1 pnp/npn
High-Speed Outputs/PWM	None	2 PWM	None	2 PWM	None	2 PWM	2 PWM	2 PWM	1 HSO
Analog	None	None	None	None	None	None	None	2 12-bit +/- 10V, 4-20mA	None
<b>Program</b>									
Ladder Code Memory	24K (virtual)								
Memory Operands	256 coils, 256 registers, 64 timers								
<b>Operator Panel</b>									
Type	STN LCD								
Display Size	2 lines x 16 characters								
<b>Keypad</b>									
Keys	16 keys, 10 of which are user-labeled								
<b>General</b>									
Power Supply	24VDC								
Battery	10 years typical at 25°C, battery back-up for RTC and system data, including variable data								
Environment	IP65/NEMA4X (when panel mounted)								
Clock	Real-time clock functions (date and time)								

## Add-on modules<sup>2</sup> and accessories

Programming kit	COM Port kit	Program Cloner module	Keypad Slide kit
Programming Add-on port (isolated) + software CD Article No.: JZ-PRG	RS232/RS485 Add-on port (isolated) Article No.: JZ-RS4	Copy applications from PLC to PLC Article No.: MJ20-MEM1	Customize the Jazz keypad to your application Article No.: MJ20-JZ-SL1

# M91 Micro-OPLC™

## M91 Series Featuring:

### HMI

- Up to 80 user-designed screens
- Multilingual: supports over 15 languages and 20 graphic symbols
- Scroll between pre-programmed recipes/menus
- Info Mode—troubleshoot via the HMI panel

### PLC

- Shaft-encoder inputs and PWM outputs
- Direct temperature inputs
- Auto-tune PID, up to 4 loops
- Time-based control in 3 clicks
- Database
- Print utilities
- Full source upload

### Communication

- SMS messaging via GSM
- Remote access utilities
- PC access via MODBUS or OPC server
- MODBUS networking
- CANbus
- RS232/RS485 built-in port



... Use the perfect PLC for small applications— and skip panel wiring ...

CE/UL

Palm-size PLC + textual HMI and up to 38 onboard I/Os (expandable up to 150)

Article Number	M91-2-R1	M91-2-R2C	M91-2-R6C	M91-2-R34	M91-2-T1	M91-2-T38	M91-2-T2C	M91-2-UN2	M91-2-UA2	M91-2-RA22
	10 Digital 1 Analog Inputs 6 Relay Outputs	10 Digital 2 Analog Inputs 6 Relay Outputs	6 Digital 6 Analog Inputs 6 Relay Outputs	20 Digital 2 D/A <sup>1</sup> Inputs 12 Relay Outputs	12 Digital Inputs 12 Transistor Outputs	22 Digital Inputs 16 Transistor Outputs	10 Digital 2 D/A <sup>1</sup> Inputs 12 Transistor Outputs	10 Digital 2 D/A/PT100/TC <sup>1</sup> Inputs 12 Transistor Outputs	10 Digital 2 D/A/TC <sup>1</sup> Inputs 10 Transistor 2 Analog Outputs	8 Digital, 2 D/A 2 PT100/TC/ Digital <sup>1</sup> Inputs 8 Relay 2 Analog Outputs
<b>Inputs</b>										
Digital pnp/npn	10	10	6	22	12	22	12	12	12	12
HSC/Shaft-Encoder/ Max. Freq. Measur <sup>2</sup>	3 10kHz 16-bit	3 10kHz 16-bit	1 10kHz 16-bit	3 30kHz <sup>3</sup> 16-bit	2 10kHz 16-bit	2 30kHz <sup>3</sup> 16-bit	3 10kHz 16-bit	2 10kHz 16-bit	1 30kHz <sup>3</sup> 16-bit	1 30kHz <sup>3</sup> 16-bit
Analog	1 10-bit 0-10V, 0-20mA 4-20mA	2 10-bit 0-10V, 0-20mA 4-20mA	6 10-bit 2 0-10V 0-20mA, 4-20mA and 4 0-20mA 4-20mA	2 10-bit 0-10V, 0-20mA 4-20mA	None	None	2 10-bit 0-10V, 0-20mA 4-20mA	2 14-bit 0-10V, 0-20mA 4-20mA	2 14-bit 0-10V, 0-20mA 4-20mA	2 14-bit 0-10V, 0-20mA 4-20mA
Temperature Measurement	None	None	None	None	None	None	None	2 PT100/TC	2 TC	and as 2 PT100/TC
<b>Outputs</b>										
Digital	6 relay	6 relay	6 relay	12 relay	12 pnp	16 pnp	12 pnp	12 pnp	10 pnp	8 relay
High-Speed Outputs/ PWM <sup>4</sup>	None	None	None	None	2, first 2 outputs can function as HSO, 0.5kHz maximum					None
Analog	None	None	None	None	None	None	None	None	2 12-bit: 0-10V, 4-20mA	2 12-bit: 0-10V, 4-20mA
<b>I/O Expansion</b>										
I/Os may be added via expansion port										
<b>Program</b>										
Application Memory	36K (virtual) Ladder code capacity									
Memory Operands	256 coils, 256 registers, 64 timers									
Database	1024 integers, (indirect access)									
<b>Operator Panel</b>										
Type	STN LCD									
Display Size	2 lines x 16 characters									
<b>Keypad</b>										
Keys	15 keys									
<b>General</b>										
Power Supply	12/24VDC	12/24VDC	24VDC	24VDC	12/24VDC	24VDC	12/24VDC	12/24VDC	24VDC	24VDC
Battery	7 years typical at 25 °C, battery back-up for all memory sections and RTC									
Environment	IP65/NEMA4X (when panel mounted)									
Clock (RTC)	Real-time clock functions (date and time)									

<sup>1</sup> In these models certain inputs are adaptable, and can function as either digital, analog, and in certain models also as thermocouple or PT100. Using adaptable inputs reduces the amount of free digital inputs. For example, M91-2-UA2 offers 12 digital inputs. Implementing 2 TC inputs requires 4 digital inputs, leaving 8 free.

<sup>2</sup> Certain inputs can function as high-speed counters, shaft-encoder or normal digital inputs.

<sup>3</sup> This specification depends on cable length.


<sup>4</sup> Certain outputs can function as high-speed or PWM inputs.digital inputs.

\* Additional models (M90 models) are listed on the Unitronics web site.

# I/O Expansion Modules

Expand your system with local or remote I/O expansion modules. Vision series support both local & remote I/O modules. M90/M91<sup>2</sup> support local modules only.

## Digital Modules

IO-DI8-T08	IO-DI8-R04	IO-DI8-R08	EX90-DI8-R08 <sup>3</sup>	IO-DI16
24VDC 8 Digital Inputs, pnp/npn, including one High-speed Counter 8 pnp Transistor Outputs	24VDC 8 Digital Inputs, pnp/npn, including one High-speed Counter 4 Relay Outputs	24VDC 8 Digital Inputs, pnp/npn, including one High-speed Counter 8 Relay Outputs	24VDC 8 Digital Inputs, pnp, including one High-speed Counter 8 Relay Outputs	24VDC, 16 Digital Inputs, pnp/npn, including one High-speed Counter
IO-T016	IO-R08	IO-R016	IO-DI8ACH	
24VDC 16 pnp Transistor Outputs	24VDC (power supply) 8 Relay Outputs	24VDC, (power supply) 16 Relay Outputs	110/220 VAC 8 AC Inputs	

## Analog, Temperature and Weight/Strain Measurements

IO-AI4-A02	IO-PT400	IO-PT4K		
24VDC (power supply) 4 Analog Inputs 12-bit, 0-10V, 0-20mA, 4-20mA, 2 Analog Outputs, 12-bit+sign, ± 10V, 0-20mA, 4-20mA	4 PT100/NI100/NI120 Inputs Range PT100: -50°C ÷ 460°C (-58°F ÷ 860°F) Range NI100: -50°C ÷ 232°C (-58°F ÷ 449°F) Range NI120: -50°C ÷ 172°C (-58°F ÷ 341°F) 12-bit	4 PT1000/NI1000 Inputs Range PT1000: -50°C ÷ 460°C (-58°F ÷ 860°F) Range NI1000: -50°C ÷ 232°C (-58°F ÷ 449°F) 12-bit		
IO-A06X	IO-LC1 <sup>4</sup>	IO-LC3 <sup>4</sup>	IO-ATCS	IO-AI8 <sup>6</sup>
24VDC (power supply) 6 Isolated Analog Outputs 0-10V, 0-20mA, 4-20mA 12-bit	12/24VDC (Power Supply) 1-3 Loadcell / Strain gauge Inputs Input voltage ranges: ± 20mV, ± 80mV Excitation: AC/DC 1 Digital pnp Input 2 pnp Outputs  Not supported by all OPLCs™	8 Thermocouple/ Analog Inputs T/C J, K, T, B, E, N, R, S, 0.1 <sup>0</sup> Resolution, 0-10V, 0-20mA, 4-20mA, 12/14-bit,	8 Thermocouple/ Analog Inputs T/C J, K, T, B, E, N, R, S, 0.1 <sup>0</sup> Resolution, 0-10V, 0-20mA, 4-20mA, 12/14-bit,	8 Analog Inputs 0 ÷ 10V / 0 ÷ 20mA 14-bit,

## I/O Expansion Module Adapters

EX-A2X <sup>1</sup>
Local I/O module adapter. Galvanic isolation. Up to 8 modules may be connected to a single PLC <sup>1</sup> . Supports both 12/24 VDC
EX-RC1 <sup>5</sup>
Remote I/O module adapter, via CANbus. Multiple adapters may be connected to a single PLC, with up to 8 modules to each adapter <sup>1</sup> . Supports both 12/24 VDC.

New!\*

<sup>1</sup> Number of I/Os may vary according to module

<sup>2</sup> Except for M90-19-B1A

<sup>3</sup> The EX90 is housed in an open casing. Only one EX90 can be connected per PLC, as a single expansion module; Expansion adapter not required.

<sup>4</sup> IO-LCx models are supported by the M91 & Vision series. Not supported by the M90 series.

<sup>5</sup> EX-RC1 is supported by Vision series. Not supported by M91 series.

<sup>6</sup> Not yet UL certified.

\* Additional 12VDC models are listed on Unitronics web site.

## XL Digital/Analog Modules<sup>6</sup>

IO-D16A3-R016	IO-D16A3-T016	EX-D16A3-R08	EX-D16A3-T016
24VDC, 16 Digital Inputs pnp/npn, including two High-speed Counters, 3 Analog Inputs, 10-bit, 0-20mA, 4-20mA, 16 Relay Outputs	24VDC, 16 Digital Inputs pnp/npn, including one High-speed Counter, 3 Analog Inputs, 10-bit, 0-20mA, 4-20mA, 15 pnp + 1 pnp/npn Transistor Outputs including 1 HSO	24VDC, built-in Expansion Module Adapter, 16 Digital Inputs, pnp/npn, including two High-speed Counters, 3 Analog Inputs 10-bit, 0-20mA, 4-20mA, 8 Relay Outputs	24VDC, built-in Expansion Module Adapter, 16 Digital Inputs, pnp/npn, including one High-speed Counter, 3 Analog Inputs 10-bit, 0-20mA, 4-20mA, 15 pnp + 1 pnp/npn Transistor Outputs including 1 HSO

# Snap-in I/O Modules



Plug a Snap-in module directly into the back of a Vision PLC. Compatible with all V200, V500 and V1040 (V2XX, V5XX, V1040) Vision models.

New!\*

Article No.	V200-18-E1B	V200-18-E2B	V200-18-E3XB	V200-18-E4XB	V200-18-E5B	V200-18-E6B <sup>1</sup>	V200-18-E62B <sup>1</sup>
Digital Inputs (isolated)	16 npn/pnp (including 2 Shaft-encoder inputs)	16 npn/pnp (including 2 Shaft-encoder inputs)	18 npn/pnp (including 2 Shaft-encoder inputs)	18 npn/pnp (including 2 Shaft-encoder inputs)	18 npn/pnp (including 2 Shaft-encoder inputs)	18 npn/pnp (including 2 Shaft-encoder inputs)	30 npn/pnp (including 2 Shaft-encoder inputs)
Analog Inputs	3 10-bit 0-10V, 0-20mA 4-20mA	2 10-bit 0-10V, 0-20mA 4-20mA	4 isolated 12-14-bit (software dependent) 0-10V, 0-20mA 4-20mA and/or 4 TC/PT100	4 isolated 12-14-bit (software dependent) 0-10V, 0-20mA 4-20mA and/or 4 TC/PT100	3 10-bit 0-10V, 0-20mA 4-20mA	3 10-bit 0-10V, 0-20mA 4-20mA & 2 14-bit 0-10V, 0-20mA 4-20mA and/or 2 TC/PT100	2 10-bit 0-10V, 0-20mA 4-20mA
Temperature Measurement	None	None	4 TC/PT100	4 TC/PT100	None	2 TC/PT100	None
Digital Outputs (isolated)	4 npn/pnp (including 2 High-speed outputs)	4 npn/pnp (including 2 High-speed outputs)	2 npn/pnp High-speed	17 npn/pnp (including 2 High-speed)	15 npn, 2 npn/pnp (including 2 High-speed)	2 npn/pnp High-speed	28 npn 2 npn/pnp High-speed
Relay Outputs (isolated)	10	10	15	None	None	15	None
Analog Outputs	None	2 12-bit 0-10V, 0-20mA 4-20mA	4 12-bit 0-10V, 4-20mA isolated	4 12-bit 0-10V, 4-20mA isolated		2 12-bit 0-10V, 4-20mA isolated	None

<sup>1</sup> V200-18-E6B, V200-18-E62B is not yet UL certified

## Additional COM Module

Use these modules to enhance Vision's communication capabilities<sup>1</sup>



Ethernet	RS232/RS485	Isolated RS232/RS485	CANbus
V100-17-ET2 (for V130 and V350 series)	V100-17-RS4 (for V130 and V350 series)	V100-17-RS4X (for V130 and V350 series)	V100-17-CAN (for V130 and V350 series)
V200-19-ET1 (for V200, V500 and V1040 series)	V200-19-RS4 (for V200, V500 and V1040 series)	V200-19-RS4-X (for V200, V500 and V1040 series)	

<sup>1</sup> V200/V500/V1040: 1 optional port for serial or Ethernet, V130/V350: 1 optional port for serial or Ethernet & 1 optional port for CANbus

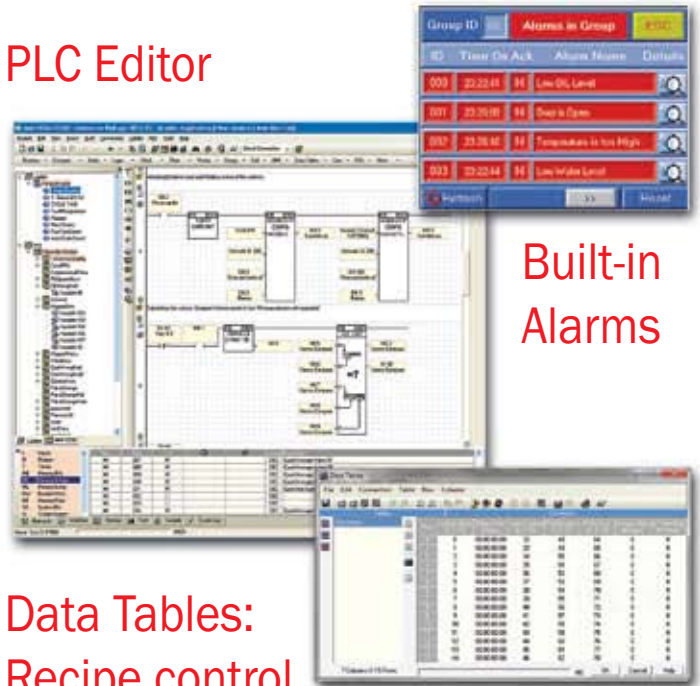
# A single, integrated programming environment - Free of charge!

## Easy Hardware Configuration



- Select base PLC
- Configure I/Os

## PLC Editor



Built-in Alarms

## Data Tables: Recipe control

- SClick & drop Ladder elements
- Modular program function: create & call subroutines
- Built-in function blocks save code & simplify tasks

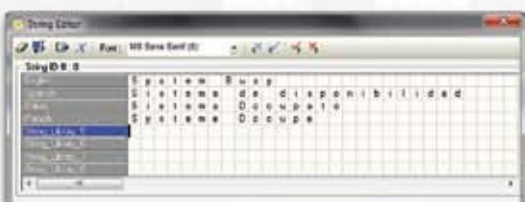
## Intuitive HMI Design



## Image Library

- Assign functions to HMI keys
- Create & conditionally display operator messages
- Assign "Touch" properties to any screen element
- Use color images & graph to reflect variable values & trends

String Library: instantly switch HMI language



\* Note that graphics are supported by the Vision series; (Touch Library, & Alarms are supported by the Enhanced features, String Vision series.)

\* Note that software features are PLC model-dependent

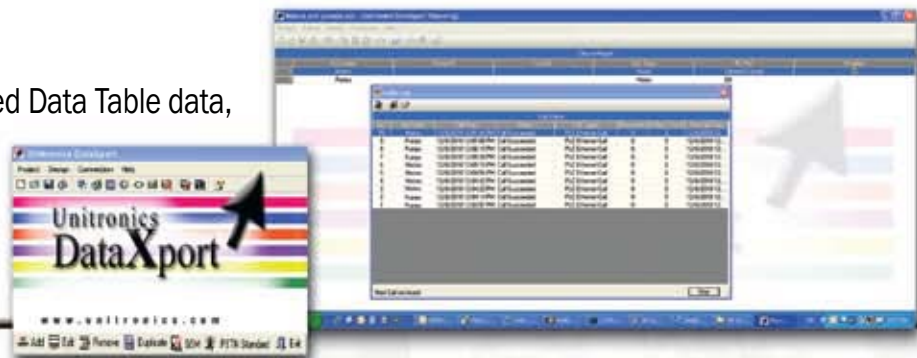
# Software Utilities: Added Value - Free of charge!

**Remote Access & Operator:**  
PC to PLC access/control via modem or network, view multiple operator panels



**SD Card Suite:**  
Manage data— Trends, Alarms, Data Table; remotely read/write data to SD Card

**DataXport:**  
Log run-time/stored Data Table data, export to Excel

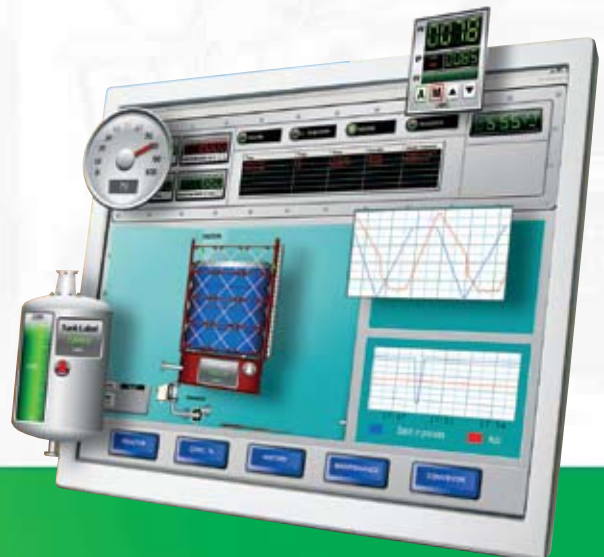


- UniOPC/UniDDE Server: Communicate with SCADA/Windows applications
- UniDownload Manager: Download multiple, compressed PLC applications simultaneously
- UniVision Licensing: Protect your Intellectual Property
- ActiveX & .NET communication driver - Easily implement communication between PLC and PC applications



Interfaces to Wonderware, automation software world market leader.

Wonderware software for HMI and SCADA applications.





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