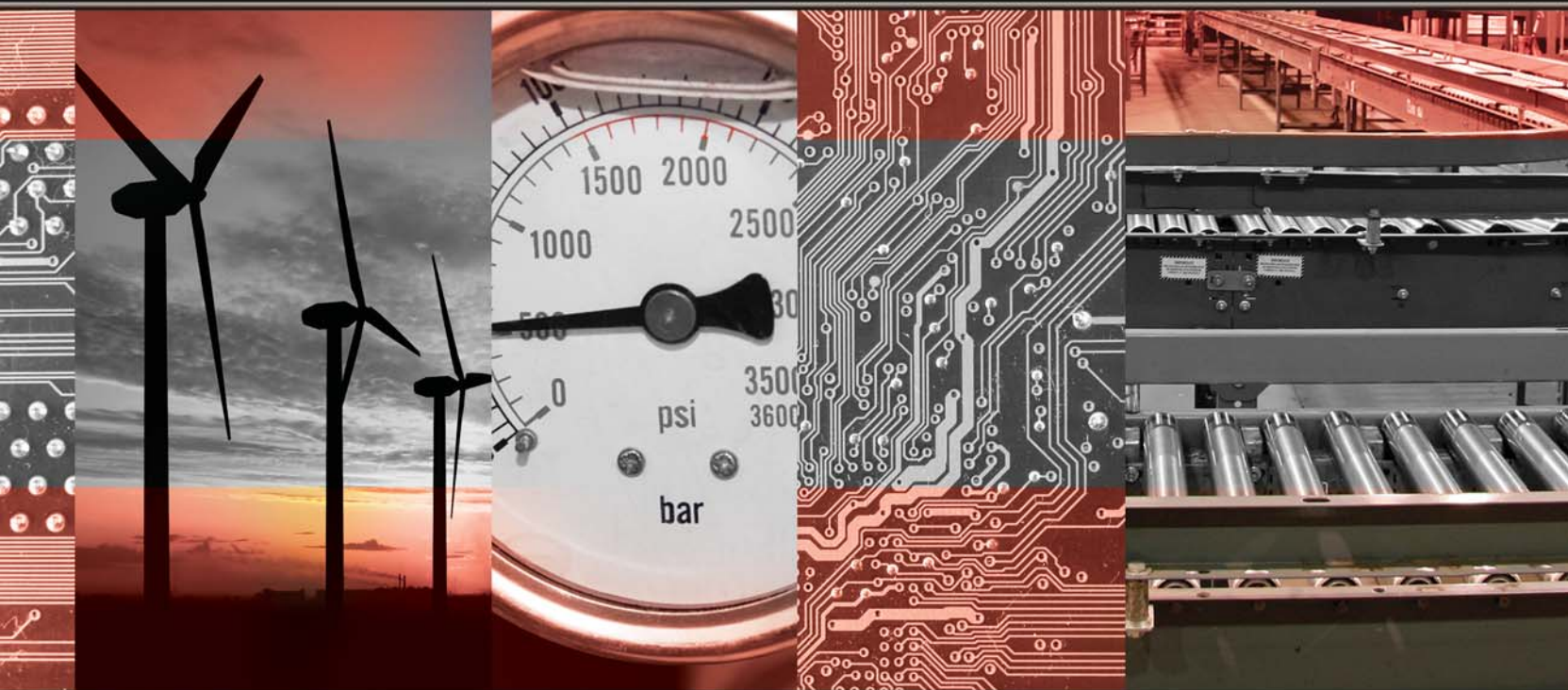




**PLC + HMI =  
Complete Control**





# PLC + HMI = Complete Control

**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 + HMI = 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





Much more than a "smart relay". Full-function PLC & 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>5</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	6 pnp/npn	6 pnp/npn	8 pnp/npn	8 pnp/npn	18 pnp/npn	18 pnp/npn	11 pnp/npn	11 pnp/npn	6 pnp/npn
High-Speed Counters	2, function as either high-speed counters (5kHz, 16-bit), or as normal digital inputs						1, functions as either high-speed counter (5kHz, 16-bit), or as normal digital input		
Analog	None	None	2 10 bit, 0-10V and 2 10 bit, 0-20mA, 4-20mA	2 10 bit, 0-10V and 2 10 bit 0-20mA, 4-20mA	2 10 bit, 0-10V and 2 10 bit 0-20mA, 4-20mA	2 10 bit, 0-10V and 2 10 bit 0-20mA, 4-20mA	2 10 bit, 0-10V and 1 10 bit 0-20mA, 4-20mA	2 10 bit, 0-10V and 2 10 bit 0-20mA, 4-20mA	3 10-bit 0-10V
Temperature Measurement	None	None	None	None	None	None	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)								
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

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

## Jazz<sup>®</sup> series featuring:

### HMI

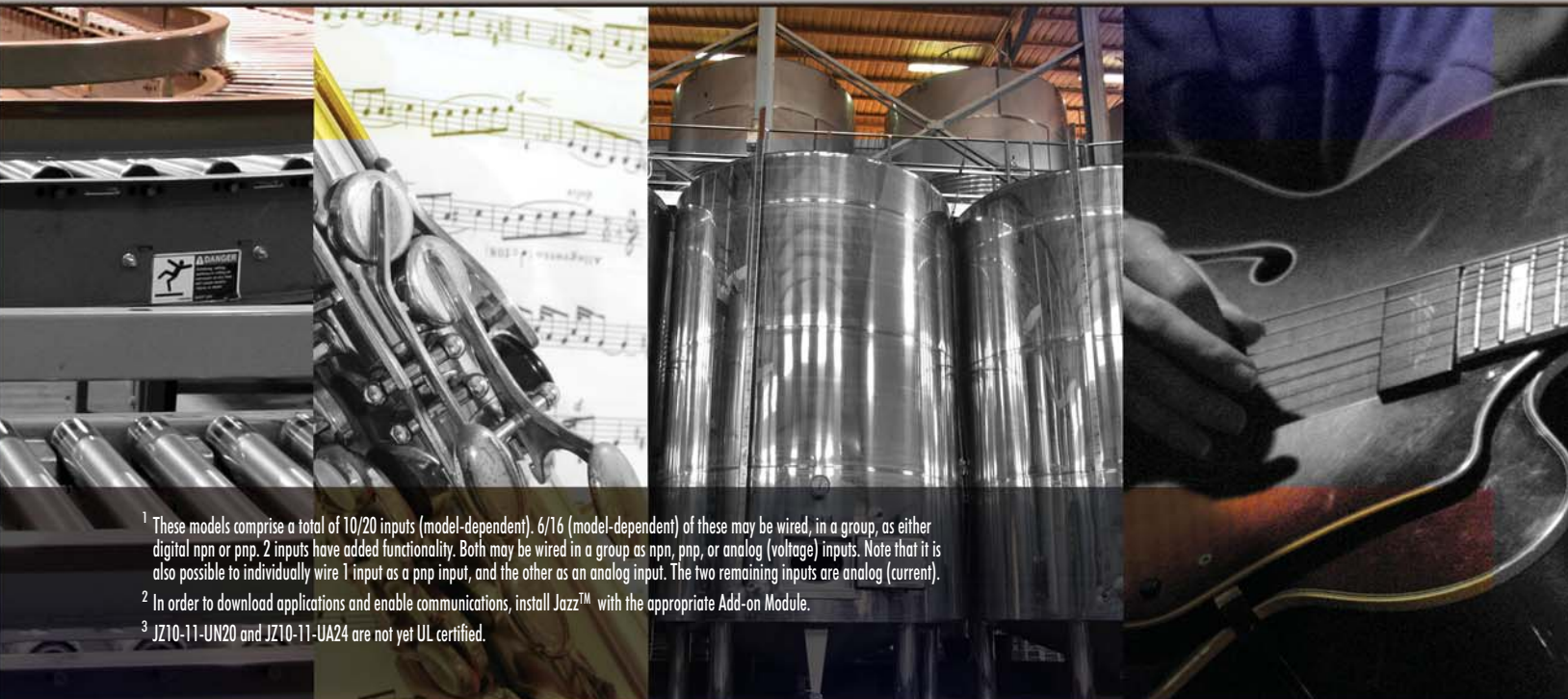
- Up to 60 user-designed screens
- Multilingual: supports over 15 languages and 20 graphic symbols
- Scroll between pre-programmed recipes/menus

### 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.

# M91 Micro-OPLC™



**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	10 pnp/npn	10 pnp/npn	6 pnp/npn	22 pnp/npn	12 pnp/npn	22 pnp/npn	12 pnp/npn	12 pnp/npn	12 pnp/npn	12 pnp/npn
HSC/Shaft-Encoder/ Max. Freq. Measurer <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	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									
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)									

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



## 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 via Unitronics' protocol (in C models only)
- RS232/RS485 built-in port

<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 inputs, or normal digital inputs.

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

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

# Vision120™ Graphic OPLC™

CE/UL

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 Transistor 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	10 pnp/npn	10 pnp/npn	6 pnp/npn	22 pnp/npn	12 pnp/npn	22 pnp/npn	12 pnp/npn	12 pnp/npn	12 pnp/npn	12 pnp/npn
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	1 30kHz <sup>3</sup> 32 bit	1 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 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	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									
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 data (recipe parameters, datalogs, etc.) 192K fixed data (read-only data, ingredient names, etc)									
<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)									



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

## Vision120™ 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 (in C models only)
- 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.

# Vision 130™ Graphic OPLC™

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-R2	V130-33-R34	V130-33-TR34	V130-33-R6	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	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> 8 Relay 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		12 pnp/npn	22 pnp/npn	22 pnp/npn	6 pnp/npn	12 pnp/npn	12 pnp/npn	12 pnp/npn	22 pnp/npn	12 pnp/npn
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	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 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		None	None	4 npn (3 PTO) 200kHz max	None	None	4 npn (2 PTO) 200kHz max	7 2kHz	7 2kHz	5 2kHz
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									
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, done 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)									

... Complex recipe, TCP/IP environment! better use Vision130™ ...

## 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

- 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
- Remote Access utilities

### 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
- SD card - log, backup, clone, and more
- Time-based control in 3 clicks
- MODBUS protocol support
- CANbus: CANopen, UniCAN, & more
- Ports: supplied with 1 RS232/RS485; 2 ports may be added:  
1 serial/Ethernet and/or 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 are not yet UL certified.

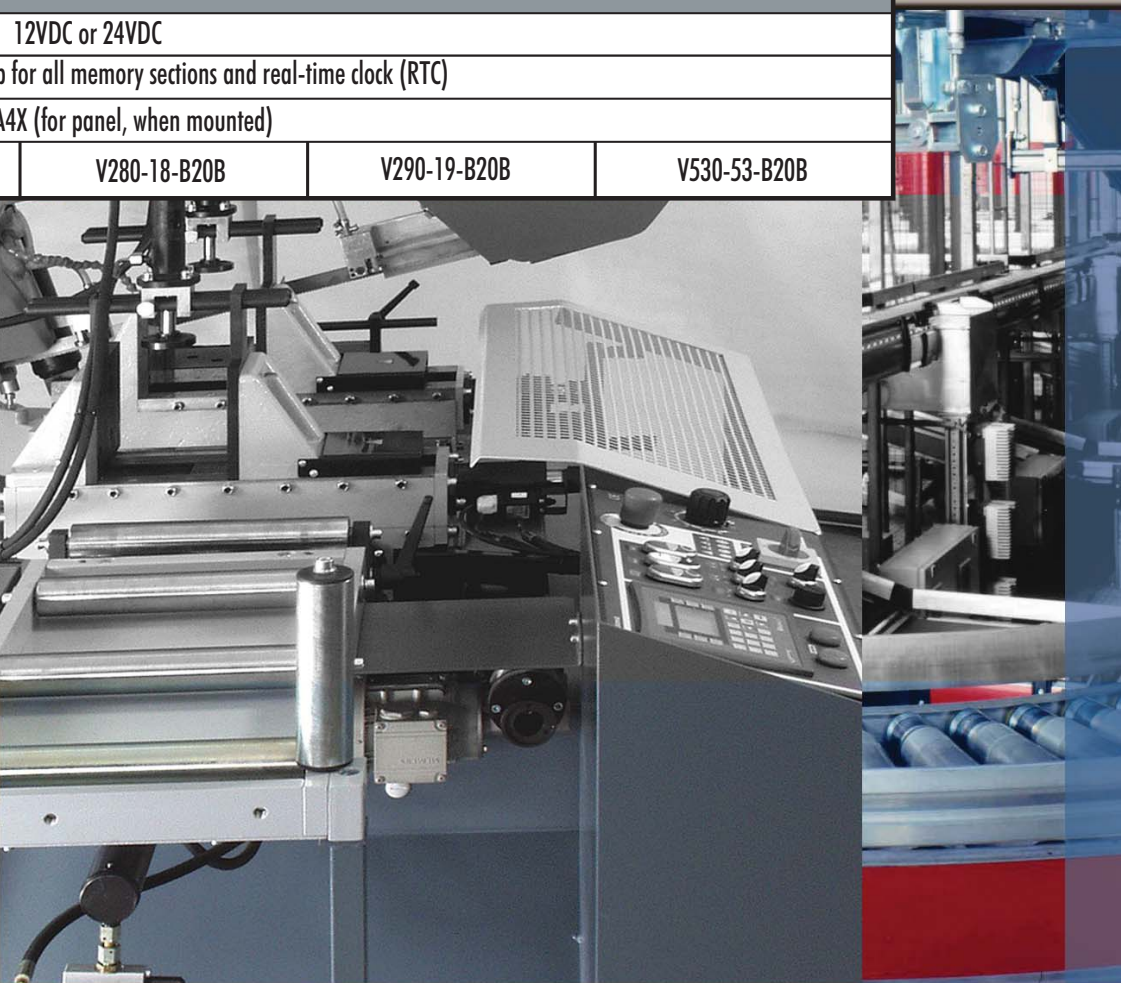
# Vision™ Graphic/Touch OPLC™



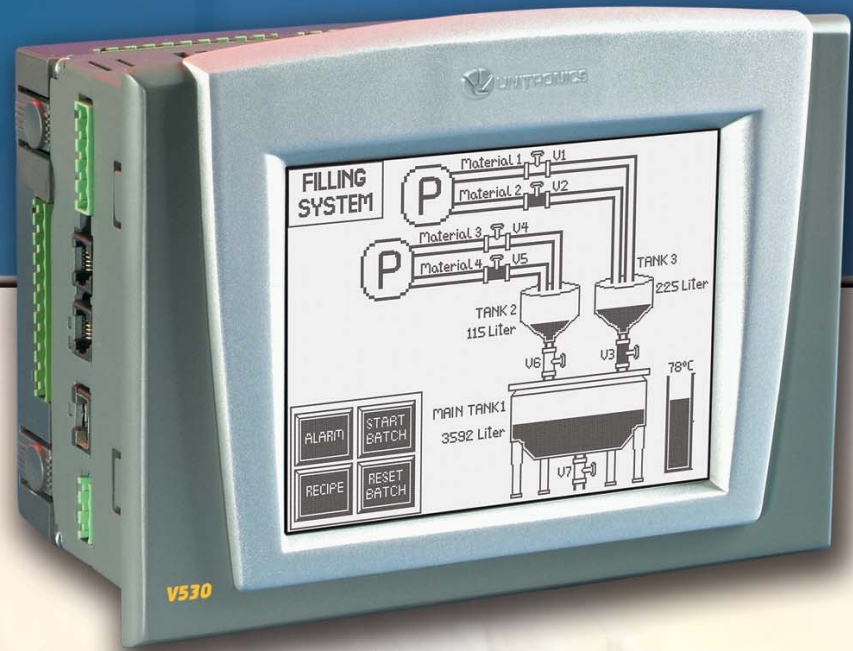
Advanced PLCs with an integrated Operator Panel  
(graphic or touch), plus Snap-in & expansion I/Os (up to 316)



	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 43 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 data (recipe parameters, datalogs, etc.), 192K fixed data (read-only data, ingredient names, etc.)				
<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



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



## 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

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



# Vision350™ Color OPLC™



## Color it beautiful!

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

New!\*

New!\*

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 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	None	12 pnp/npn	22 pnp/npn	22 pnp/npn	6 pnp/npn	12 pnp/npn	12 pnp/npn	12 pnp/npn	22 pnp/npn	12 pnp/npn
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	2 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	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		None	None	4 npn (3 PTO) 200kHz max	None	None	4 npn (2 PTO) 200kHz max	7 2kHz	7 2kHz	5 2kHz
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: 3MB • Fonts: 512K									
Scan Time	15µ sec per 1K of typical application									
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, done 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 • 256 • 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)									

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

## Color Vision350™ Series Featuring:

### HMI

- 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

### 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
- Remote Access utilities
- MODBUS protocol support
- CANbus: CANopen, UniCAN, & more
- Ports: supplied with 1 RS232/RS485; 2 ports may be added: 1 serial/Ethernet and/or 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.

# Vision570™ Color OPLC™

CE/UL

Color it big with the Vision570™; an advanced PLC with an integrated color Touchpanel, plus Snap-in & Expansion I/Os (up to 1000)

I/O Options	
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 43 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
Program	
Application Memory	Application Logic: 2MB • Images: 6MB • Fonts: 1MB
Scan Time	9µsec per 1K of typical application
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
Operator Panel	
Type	TFT LCD
Display Backlight Illumination	white LED   Fluorescent lamp
Colors	256
Display Resolution & Size	320 x 240 pixels (QVGA), 5.7"
Touchscreen	Resistive, Analog
Brightness	Adjustable via touchpanel or software
General	
Power Supply	V570-57-T20B: 12/24VDC   V570-57-T40B: 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)
Article Number	V570-57-T20B <sup>1</sup>   V570-57-T40B

<sup>1</sup> Soon to be UL certified





... Watch the Vision570™  
bring your system to life ...

## Color Vision570™ 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

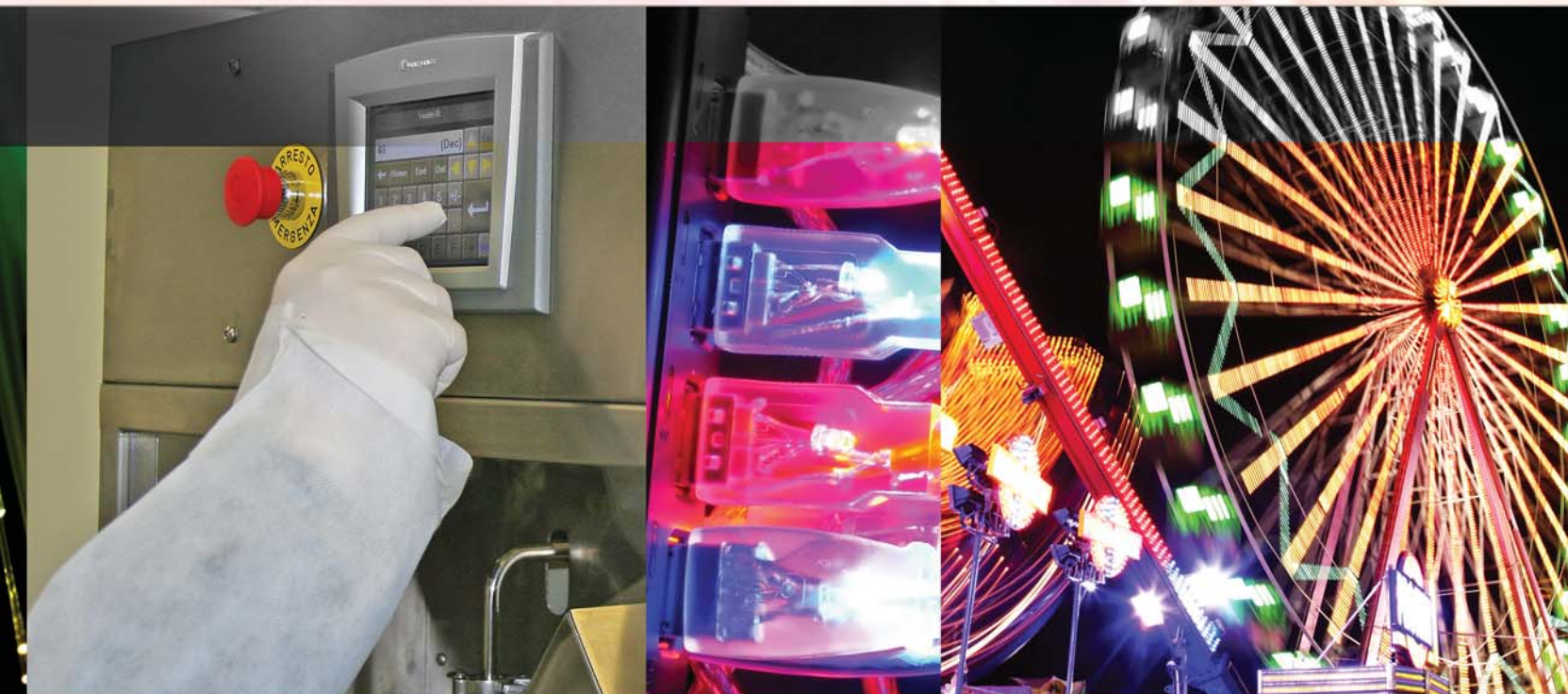
### HMI

- 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



### 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
- CANbus: CANopen, UniCAN, & more
- Ports: supplied with 2 isolated RS232/RS485 and 1 CANbus; 1 port may be added for serial/Ethernet



# I/O Expansion Modules

Expand your system with local or remote I/O expansion modules<sup>1</sup>. Vision series support both local & remote I/O modules. M90/M91<sup>2</sup> support local modules only.

## Digital Modules

IO-DI8-TO8	IO-DI8-RO4	IO-DI8-RO8	EX90-DI8-RO8 <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-TO16	IO-RO8	IO-RO16	IO-DI8ACH	
12/24VDC 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-AO2	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-AO6X	IO-LC1 <sup>4</sup>	IO-LC3 <sup>4</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 Setpoint 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

## I/O Expansion Module Adapters

EX-A1
Local I/O module adapter. 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.

<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.

## New! XL Digital/Analog Modules

IO-D16A3-RO16 <sup>6</sup>	IO-D16A3-TO16 <sup>6</sup>	EX-D16A3-RO8 <sup>6</sup>	EX-D16A3-TO16 <sup>6</sup>
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

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

# Snap-in I/O Modules



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

V200-18-E1B	V200-18-E2B	V200-18-E3XB	V200-18-E4XB	V200-18-E5B	V200-18-E6B <sup>1</sup>
16 isolated Digital Inputs (including 2 Shaft-encoder Inputs)	16 isolated Digital Inputs (including 2 Shaft-encoder Inputs)	18 isolated Digital Inputs (including 2 Shaft-encoder Inputs)	18 isolated Digital Inputs (including 2 Shaft-encoder Inputs)	18 isolated Digital Inputs (including 2 Shaft-encoder Inputs)	18 isolated Digital Inputs (including 2 Shaft-encoder Inputs)
3 Analog Inputs	2 Analog Inputs	4 isolated Thermocouple/PT100/ Analog Inputs	4 isolated Thermocouple/PT100/ Analog Inputs	3 Analog Inputs	3 Analog Inputs
4 isolated Transistor Outputs (including 2 High-speed Outputs)	4 isolated Transistor Outputs (including 2 High-speed Outputs)	2 isolated Transistor Outputs (including 2 High-speed Outputs)	17 isolated Transistor Outputs (including 2 High-speed Outputs)	17 isolated Transistor Outputs (including 2 High-speed Outputs)	2 Thermocouple/PT100/ Analog Inputs
10 isolated Relay Outputs	10 isolated Relay Outputs	15 isolated Relay Outputs	4 isolated Analog Outputs		2 isolated Transistor Outputs (including 2 High-speed Outputs)
	2 Analog Outputs	4 isolated Analog Outputs			15 isolated Relay Outputs
					2 isolated Analog Outputs

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

## Additional COM Module

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

1 Ethernet port	1 RS232/RS485 port	1 isolated RS232/RS485 port	1 CANbus port
V100-17-ET2 (for V130 & V350 series)	V100-17-RS4 (for V130 & V350 series)	V100-17-RS4X (for V130 & V350 series)	V100-17-CAN (for V130 & V350 series)
V200-19-ET1 (for V200 & V500 series)	V200-19-RS4 (for V200 & V500 series)	V200-19-RS4-X (for V200 & V500 series)	

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



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