

Unitronics 2011



# PLC + HMI in One Unit





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# PLC + HMI in One Unit

**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.

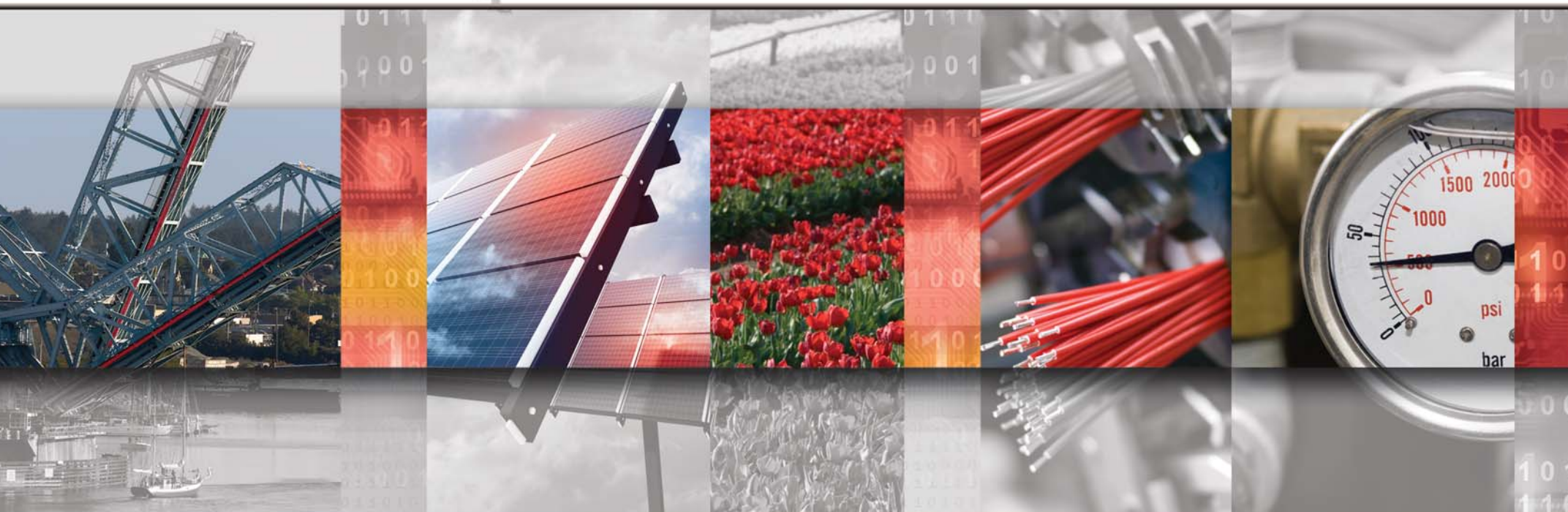
Unitronics' field-proven PLCs automate tens of thousands of installations in diverse fields: petrochemical, automotive, food processing, plastic & textile, energy & environment, water & waste water management—anywhere automated processes are required.

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





# Vision1210™/1040™ Color OPLC™

## Color Vision1210™/1040™ Series Featuring:

### 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

### 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
- 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



V1210™



V1040™

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



## Get the big picture - Vision1210™/1040™ PLC & 12.1"/10.4" touchscreen HMI

| Article Number                 | V1040-T20B   | V1210-T20BJ*                          |
|--------------------------------|--|---------------------------------------|
| <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<br>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"   | 800 x 600 pixels (SVGA), 12.1"        |
| Touchscreen                    | Resistive, Analog  |                                       |
| <b>Keyboard</b>                |  |                                       |
| Number of keys                 | 9 programmable function keys   | Virtual Keypad                        |
| <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)   | IP66/IP65/NEMA4X (when panel mounted) |
| Clock                          | Real-time clock functions (date and time)  |                                       |

Not yet UL certified



# Vision570™/560™ Color OPLC™

## Color Vision570™/560™ Series Featuring:

### 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

### 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
- 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



V570™

... 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)



| Article Number                 | V570-57-T20B   | V570-57-T40B     | V560-T25B*   | V570-57-T20B-J* |
|--------------------------------|--|------------------|--|-----------------|
| <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<br>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"  |                  |  |                 |
| Touchscreen                    | Resistive, Analog  |                  |  |                 |
| <b>Keyboard</b>                |  |                  |  |                 |
| Number of keys                 | Virtual keyboard   |                  | 24 programmable keys. Labeling options - function keys or customized |                 |
| <b>General</b>                 |  |                  |  |                 |
| 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)   |                  | IP66/IP65/NEMA4X (when panel mounted)                                |                 |
| Clock                          | Real-time clock functions (date and time)  |                  |  |                 |

\* Not yet UL certified



V560™



## 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
- Micro SD card—log, backup, clone, & more
- Time-based control in 3 clicks

### 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
- DF1 Slave
- Ports: supplied with 1 RS232/RS485; 2 ports may be added: 1 Serial/Ethernet/Profibus and 1 CANbus



## Color it beautiful!

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

| Article Number  | V350-35-B1   | V350-35-TR20 <sup>+</sup>   | V350-35-R34   | V350-35-TR34  | V350-35-TR6 <sup>+</sup>   | V350-35-RA22   | V350-35-TRA22   | V350-35-T2  | V350-35-T38   | V350-35-TA24  |
|---|--|---|---|---|--|--|---|---|---|---|
|   | No onboard I/Os  | 10 Digital<br>2 D/A Inputs <sup>1</sup><br>6 Relay Outputs<br>2 High-speed Transistor Outputs | 20 Digital<br>2 D/A Inputs <sup>1</sup><br>12 Relay Outputs | 20 Digital<br>2 D/A Inputs <sup>1</sup><br>8 Relay<br>4 High-speed Transistor Outputs | 6 Digital<br>2 D/A, 4 Analog Inputs <sup>1</sup><br>6 Relay<br>2 High-speed Transistor Outputs | 8 Digital<br>2 D/A,<br>2 PT100/TC/<br>Digital <sup>1</sup> Inputs<br>8 Relay<br>2 Analog Outputs | 8 Digital, 2 D/A<br>2 PT100/TC/<br>Digital <sup>1</sup> Inputs<br>4 Relay, 2 Analog<br>4 High-speed<br>Transistor Outputs | 10 Digital<br>2 D/A Inputs <sup>1</sup><br>12 Transistor<br>Outputs | 20 Digital<br>2 D/A Inputs <sup>1</sup><br>16 Transistor<br>Outputs | 8 Digital<br>2 D/A, 2 PT100/<br>TC/Digital <sup>1</sup> Inputs<br>10 Transistor<br>2 Analog Outputs |
| <b>Inputs</b>   |  |   |   |   |  |  |   |   |   |   |
| Digital   |  | 12  | 22  | 22  | 8  | 12   | 12  | 12  | 22  | 12  |
| HSC/Shaft-Encoder/<br>Max Freq. Measurer <sup>2,3</sup> |  | 3 200kHz <sup>4</sup><br>32-bit   | 3 30kHz<br>32-bit   | 3 200kHz <sup>4</sup><br>32-bit   | 1 200kHz <sup>4</sup><br>32-bit  | 1 30kHz<br>32-bit  | 1 200kHz <sup>4</sup><br>32-bit   | 3 30kHz<br>32-bit   | 2 30kHz<br>32-bit   | 1 30kHz<br>32-bit   |
| Analog  | None   | 2 10-bit, 0-10V<br>0-20mA<br>4-20mA   | 2 10-bit, 0-10V<br>0-20mA<br>4-20mA                         | 2 10-bit, 0-10V<br>0-20mA<br>4-20mA   | 6 10-bit<br>2 0-10V<br>0-20mA, 4-20mA<br>4 0-20mA<br>4-20mA                                    | 2 14-bit<br>0-10V, 0-20mA<br>4-20mA  | 2 (2 modes)<br>Normal: 14-bit<br>Fast: 12-bit<br>0-10V, 0-20mA<br>4-20mA  | 2 10-bit<br>0-10V<br>0-20mA<br>4-20mA                               | 2 10-bit<br>0-10V, 0-20mA<br>4-20mA                                 | 2 14-bit<br>0-10V, 0-20mA<br>4-20mA   |
| Temperature<br>Measurement                              |  | None  | None  | None  | None   | and as<br>2 PT100/TC   | and as<br>2 PT100/TC  | None  | None  | and as<br>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)<br>200kHz max   | None  | 4 npn (3 PTO)<br>200kHz max   | 2 npn (2 PTO)<br>200kHz max  | None   | 4 npn (2 PTO)<br>200kHz max   | 7 0.5kHz  | 7 0.5kHz  | 5 0.5kHz  |
| Analog  |  | None  | None  | None  | None   | 2 12-bit<br>0-10V, 4-20mA  | 2 12-bit<br>0-10V, 4-20mA   | None  | None  | 2 12-bit<br>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 Logic: 1MB • Images: 6MB • Fonts: 512K   |   |   |   |  |  |   |   |   |   |
| 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<br>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)  |   |   |   |  |  |   |   |   |   |

<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-TR20 & V350-35-TR6 are not yet UL certified.



# Vision130™ Graphic OPLC™

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

CE/UL

## 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

### 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

### 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
- DF1 Slave
- Ports: supplied with 1 RS232/RS485; 2 ports may be added: 1 Serial/Ethernet/Profibus and 1 CANbus



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

| Article Number   | V130-33-B1  | <b>New!</b><br>V130-33-TR20*  | V130-33-R34   | V130-33-TR34  | <b>New!</b><br>V130-33-TR6*  | V130-33-RA22  | V130-33-TRA22  | V130-33-T2   | V130-33-T38  | V130-33-TA24  |
|--|---|---|---|---|--|---|--|--|--|---|
|  | No onboard I/Os   | 10 Digital<br>2 D/A Inputs <sup>1</sup><br>6 Relay Outputs<br>2 High-speed Transistor Outputs | 20 Digital<br>2 D/A Inputs <sup>1</sup><br>12 Relay Outputs | 20 Digital<br>2 D/A Inputs <sup>1</sup><br>8 Relay<br>4 High-speed Transistor Outputs | 6 Digital, 2 D/A<br>4 Analog Inputs <sup>1</sup><br>6 Relay Outputs<br>2 High-speed Transistor Outputs | 8 Digital<br>2 D/A,<br>2 PT100/TC/<br>Digital <sup>1</sup> Inputs<br>4 Relay, 2 Analog<br>4 High-speed Transistor Outputs | 8 Digital, 2 D/A<br>2 PT100/TC/<br>Digital <sup>1</sup> Inputs<br>4 Relay, 2 Analog<br>4 High-speed Transistor Outputs | 10 Digital<br>2 D/A Inputs <sup>1</sup><br>12 Transistor Outputs | 20 Digital<br>2 D/A Inputs <sup>1</sup><br>16 Transistor Outputs | 8 Digital<br>2 D/A, 2 PT100/<br>TC/Digital <sup>1</sup> Inputs<br>10 Transistor<br>2 Analog Outputs |
| <b>Inputs</b>  |   |   |   |   |  |   |  |  |  |   |
| Digital pnp/npn  |   | 12  | 22  | 22  | 8  | 12  | 12   | 12   | 22   | 12  |
| HSC/Shaft-Encoder/<br>Max. Freq. Measurer <sup>2,3</sup> |   | 3 200kHz <sup>4</sup><br>32-bit   | 3 30kHz<br>32-bit   | 3 200kHz <sup>4</sup><br>32-bit   | 1 200kHz <sup>4</sup><br>32-bit  | 1 30kHz<br>32-bit   | 1 200kHz <sup>4</sup><br>32-bit  | 3 30kHz<br>32-bit  | 2 30kHz<br>32-bit  | 1 30kHz<br>32-bit   |
| Analog   | None  | 2 10-bit, 0-10V<br>0-20mA<br>4-20mA   | 2 10-bit, 0-10V<br>0-20mA<br>4-20mA                         | 2 10-bit, 0-10V<br>0-20mA<br>4-20mA   | 6 10-bit<br>2 0-10V, 0-20mA<br>4-20mA and<br>4 0-20mA<br>4-20mA  | 2 14-bit<br>0-10V, 0-20mA<br>4-20mA   | 2 (2 modes)<br>Normal: 14-bit<br>Fast: 12-bit<br>0-10V, 0-20mA<br>4-20mA   | 2 10-bit<br>0-10V<br>0-20mA<br>4-20mA                            | 2 10-bit<br>0-10V, 0-20mA<br>4-20mA                              | 2 14-bit<br>0-10V, 0-20mA<br>4-20mA<br><br><b>and as</b><br>2 PT100/TC                              |
| Temperature Measurement                                  |   | None  | None  | None  | None   | <b>and as</b><br>2 PT100/TC   | <b>and as</b><br>2 PT100/TC  | None   | None   | <b>and as</b><br>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)<br>200kHz max   | None  | 4 npn (3 PTO)<br>200kHz max   | 2 npn (2 PTO)<br>200kHz max  | None  | 2 npn (2 PTO)<br>200kHz max  | 7 0.5kHz   | 7 0.5kHz   | 5 0.5kHz  |
| Analog   |   | None  | None  | None  | None   | 2 12-bit<br>0-10V, 4-20mA   | 2 12-bit<br>0-10V, 4-20mA  | None   | None   | 2 12-bit<br>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<br>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)   |   |   |   |  |   |  |  |  |   |

<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-TR6 & V130-33-TR20 Not yet UL certified.



# Vision™ Graphic/Touch OPLC™

... 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



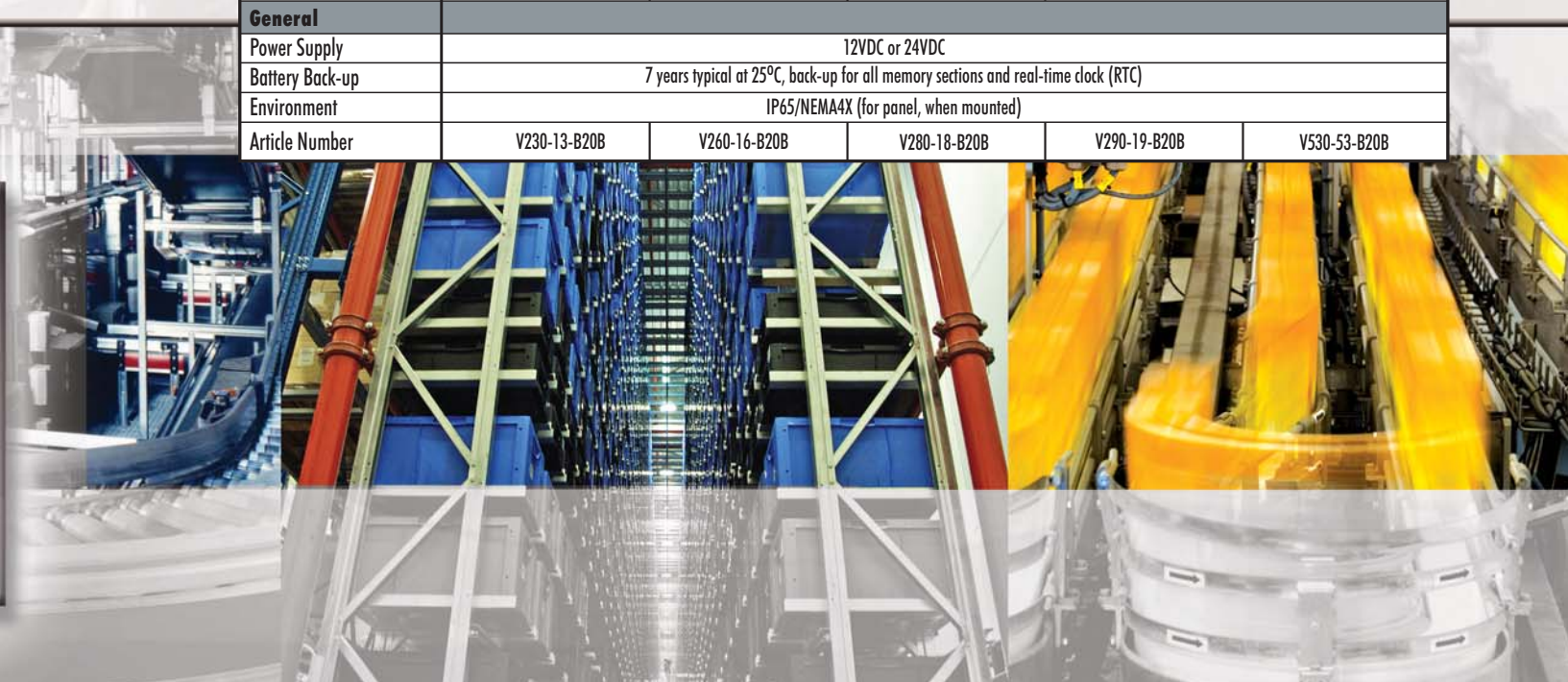
Advanced PLCs with an integrated Operator Panel (graphic or touch), plus Snap-in & expansion I/Os (up to 316)



### Communication

- 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

|                           | 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<br>3.2"   | 240 x 64 pixels<br>5.4" | 320 x 240 pixels (QVGA),<br>4.7" active area | 320 x 240 pixels (QVGA),<br>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 |





# Vision 120™ Graphic OPLC™

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



## Vision 120™ 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



## 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<br>1 Analog Inputs<br>6 Relay Outputs   | 10 Digital<br>2 Analog Inputs<br>6 Relay Outputs | 6 Digital<br>6 Analog Inputs<br>6 Relay Outputs               | 20 Digital<br>2 D/A <sup>1</sup> Inputs<br>12 Relay Outputs | 12 Digital<br>Inputs<br>12 Transistor<br>Outputs       | 22 Digital<br>Inputs<br>16 Transistor<br>Outputs | 10 Digital<br>2 D/A <sup>1</sup> Inputs<br>12 Transistor<br>Outputs | 10 Digital<br>2 D/A/PT100/<br>TC <sup>1</sup> Inputs<br>12 Transistor<br>Outputs | 10 Digital<br>2 D/A/TC <sup>1</sup> Inputs<br>10 Transistor<br>Outputs<br>2 Analog Outputs | 8 Digital<br>2 D/A, 2 PT100/<br>TC/Digital <sup>1</sup> Inputs<br>8 Relay<br>2 Analog Outputs |
| <b>Inputs</b>  |  |  |   |   |  |  |   |  |  |   |
| Digital pnp/npn  | 10   | 10   | 6   | 22  | 12   | 22   | 12  | 12   | 12   | 12  |
| HSC/Shaft-Encoder/<br>Max Freq. Measurer <sup>2</sup>              | 3 10kHz<br>32-bit  | 3 10kHz<br>32-bit                                | 1 10kHz<br>32-bit   | 3 30kHz <sup>2</sup><br>32-bit                              | 2 10kHz<br>32-bit                                      | 2 30kHz <sup>2</sup><br>32-bit                   | 3 10kHz<br>32-bit   | 2 10kHz<br>32-bit  | 2 30kHz <sup>2</sup><br>32-bit   | 2 30kHz <sup>2</sup><br>32-bit  |
| Analog   | 1 10-bit<br>0-10V, 0-20mA<br>4-20mA  | 2 10-bit<br>0-10V, 0-20mA<br>4-20mA              | 6 10-bit, 2 0-10V<br>0-20mA, 4-20mA<br>and 4 0-20mA<br>4-20mA | 2 10-bit<br>0-10V, 0-20mA<br>4-20mA                         | None   | None   | 2 10-bit<br>0-10V<br>0-20mA<br>4-20mA                               | 2 14-bit<br>0-10V, 0-20mA<br>4-20mA  | 2 14-bit<br>0-10V, 0-20mA<br>4-20mA  | 2 14-bit<br>0-10V, 0-20mA<br>4-20mA   |
| Temperature<br>Measurement   | None   | None   | None  | None  | None   | None   | None  | 2 PT100/TC   | 2 TC   | and as<br>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/<br>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<br>0-10V, 4-20mA  | 2 12-bit<br>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)  |  |   |   |  |  |   |  |  |   |

<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.



# Jazz<sup>®</sup> Micro-OPLC<sup>™</sup>

... 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 & 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

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  | JZ10-11-UA24   | JZ10-11-PT15  |
|----------------------------------|--|--|---|--|---|--|---|--|---|
|                                  | 6 Digital Inputs<br>4 Relay Outputs  | 6 Digital Inputs<br>4 Transistor Outputs | 6 Digital, 2 D/A<br>2 Analog Inputs <sup>1</sup><br>6 Relay Outputs | 6 Digital, 2 D/A<br>2 Analog Inputs <sup>1</sup><br>7 Transistor Outputs | 16 Digital, 2 D/A<br>2 Analog Inputs <sup>1</sup><br>11 Relay Outputs | 16 Digital<br>2 D/A, 2 Analog Inputs <sup>1</sup><br>20 Transistor Outputs | 9 Digital, 2 D/A<br>1 Analog<br>1 PT100/TC Inputs <sup>1</sup><br>5 Relay<br>2 Transistor Outputs | 9 Digital, 2 D/A<br>2 Analog,<br>2 PT100/TC Inputs <sup>1</sup><br>5 Relay, 2 Analog<br>2 Transistor Outputs | 3 Digital, 3 D/A<br>3 PT100/NI1000 Inputs <sup>1</sup><br>5 Relay<br>1 Transistor Outputs |
| <b>Inputs</b>                    |  |  |   |  |   |  |   |  |   |
| Digital pnp/npn                  | 6  | 6  | 8   | 8  | 18  | 18   | 11  | 11   | 6   |
| High-Speed Counters <sup>3</sup> | 2 5kHz, 16-bit   |  |   |  |   |  | 1 5kHz, 16-bit  |  |   |
| 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<br>1 pnp/npn  |
| High-Speed Outputs/<br>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)  |  |   |  |   |  |   |  |   |



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

## 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<br>Article No.: JZ-PRG | RS232/RS485 Add-on port (isolated)<br>Article No.: JZ-RS4 | Copy applications from PLC to PLC<br>Article No.: MJ20-MEM1 | Customize the Jazz keypad to your application<br>Article No.: MJ20-JZ-SL1 |



# M91 Micro-OPLC™

... 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
- RS232/RS485 built-in port

## 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<br>1 Analog Inputs<br>6 Relay Outputs                         | 10 Digital<br>2 Analog Inputs<br>6 Relay Outputs | 6 Digital<br>6 Analog Inputs<br>6 Relay Outputs                 | 20 Digital<br>2 D/A <sup>1</sup> Inputs<br>12 Relay Outputs | 12 Digital Inputs<br>12 Transistor Outputs             | 22 Digital Inputs<br>16 Transistor Outputs | 10 Digital<br>2 D/A <sup>1</sup> Inputs<br>12 Transistor Outputs | 10 Digital<br>2 D/A/PT100/TC <sup>1</sup> Inputs<br>12 Transistor Outputs | 10 Digital<br>2 D/A/TC <sup>1</sup> Inputs<br>10 Transistor<br>2 Analog Outputs | 8 Digital, 2 D/A<br>2 PT100/TC <sup>1</sup><br>Digital <sup>1</sup> Inputs<br>8 Relay<br>2 Analog Outputs |
| <b>Inputs</b>  |  |  |   |   |  |  |  |   |   |   |
| Digital pnp/npn  | 10   | 10   | 6   | 22  | 12   | 22   | 12   | 12  | 12  | 12  |
| HSC/Shaft-Encoder/<br>Max. Freq. Measurer <sup>2</sup> | 3 10kHz<br>16-bit  | 3 10kHz<br>16-bit                                | 1 10kHz<br>16-bit   | 3 30kHz <sup>3</sup><br>16-bit                              | 2 10kHz<br>16-bit                                      | 2 30kHz <sup>3</sup><br>16-bit             | 3 10kHz<br>16-bit  | 2 10kHz<br>16-bit   | 1 30kHz <sup>3</sup><br>16-bit  | 1 30kHz <sup>3</sup><br>16-bit  |
| Analog   | 1 10-bit<br>0-10V, 0-20mA<br>4-20mA                                      | 2 10-bit<br>0-10V, 0-20mA<br>4-20mA              | 6 10-bit<br>2 0-10V<br>0-20mA, 4-20mA<br>and 4 0-20mA<br>4-20mA | 2 10-bit<br>0-10V, 0-20mA<br>4-20mA                         | None   | None                                       | 2 10-bit<br>0-10V, 0-20mA<br>4-20mA                              | 2 14-bit<br>0-10V, 0-20mA<br>4-20mA                                       | 2 14-bit<br>0-10V, 0-20mA<br>4-20mA   | 2 14-bit<br>0-10V, 0-20mA<br>4-20mA   |
| Temperature<br>Measurement                             | None   | None   | None  | None  | None   | None                                       | None   | 2 PT100/TC  | 2 TC  | and as<br>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/<br>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:<br>0-10V, 4-20mA  | 2 12-bit:<br>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.

\* 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<sup>1</sup>. Vision series support both local & remote I/O modules. M90/M91<sup>2</sup> support local modules only.

## Digital Modules

|  |   |   |   |  |
|--|---|---|---|--|
| <b>IO-DI8-TO8</b>  | <b>IO-DI8-RO4</b>   | <b>IO-DI8-RO8</b>   | <b>EX90-DI8-RO8<sup>3</sup></b>   | <b>IO-DI16</b>   |
| 24VDC<br>8 Digital Inputs,<br>pnp/npn, including one<br>High-speed Counter<br>8 pnp Transistor Outputs | 24VDC<br>8 Digital Inputs,<br>pnp/npn, including one<br>High-speed Counter<br>4 Relay Outputs | 24VDC<br>8 Digital Inputs,<br>pnp/npn, including one<br>High-speed Counter<br>8 Relay Outputs | 24VDC<br>8 Digital Inputs,<br>pnp, including one<br>High-speed Counter<br>8 Relay Outputs | 24VDC<br>16 Digital Inputs,<br>pnp/npn,<br>including one<br>High-speed Counter |
| <b>IO-TO16</b>   | <b>IO-RO8</b>   | <b>IO-RO16</b>  | <b>IO-DI8ACH</b>  |  |
| 24VDC<br>16 pnp Transistor<br>Outputs  | 24VDC (power supply)<br>8 Relay Outputs   | 24VDC (power supply)<br>16 Relay Outputs  | 110/220 VAC<br>8 AC Inputs  |  |



## Analog, Temperature and Weight/Strain Measurements

|   |  |  |
|---|--|--|
| <b>IO-AI4-AO2</b>   | <b>IO-PT400</b>  | <b>IO-PT4K</b>   |
| 24VDC (power supply)<br>4 Analog Inputs<br>12-bit, 0-10V, 0-20mA,<br>4-20mA,<br>2 Analog Outputs,<br>12-bit + sign, ±10V,<br>0-20mA, 4-20mA | 4 PT100/NI100/NI120 Inputs<br>Range PT100:<br>-50°C ÷ 460°C (-58°F ÷ 860°F)<br>Range NI100:<br>-50°C ÷ 232°C (-58°F ÷ 449°F)<br>Range NI120:<br>-50°C ÷ 172°C (-58°F ÷ 341°F)<br>12-bit                | 4 PT1000/NI1000 Inputs<br>Range PT1000:<br>-50°C ÷ 460°C<br>(-58°F ÷ 860°F)<br>Range NI1000:<br>-50°C ÷ 232°C<br>(-58°F ÷ 449°F)<br>12-bit |
| <b>IO-AO6X</b>  | <b>IO-LC1<sup>4</sup></b>  | <b>IO-LC3<sup>4</sup></b>  |
| 24VDC (power supply)<br>6 Isolated Analog Outputs<br>0-10V, 0-20mA, 4-20mA<br>12-bit  | 12/24VDC (Power Supply)<br>1-3 Loadcell / Strain gauge Inputs<br>Input voltage ranges: ±20mV, ±80mV<br>Excitation: AC/DC<br>1 Digital pnp Input<br>2 pnp Outputs<br><b>Not supported by all OPLCs™</b> | 8 Thermocouple/<br>Analog Inputs<br>T/C J, K, T, B, E, N, R, S,<br>0.1° Resolution,<br>0-10V, 0-20mA, 4-20mA,<br>12/14-bit                 |

## I/O Expansion Module Adapters

|   |
|---|
| <b>EX-A2X<sup>1</sup></b>   |
| 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                                   |
| <b>EX-RC1<sup>5</sup></b>   |
| 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. |



- Number of I/Os may vary according to module
- Except for M90-19-B1A
- 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.
- IO-LCx models are supported by the M91 & Vision series. Not supported by the M90 series.
- EX-RC1 is supported by Vision series. Not supported by M91 series.
- Not yet UL certified.

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

## XL Digital/Analog Modules

|  |   |   |  |
|--|---|---|--|
| <b>IO-D16A3-RO16</b>   | <b>IO-D16A3-TO16</b>  | <b>EX-D16A3-RO8</b>   | <b>EX-D16A3-TO16</b>   |
| 24VDC,<br>16 Digital Inputs pnp/npn,<br>including two<br>High-speed Counters,<br>3 Analog Inputs,<br>10-bit, 0-20mA, 4-20mA,<br>16 Relay Outputs | 24VDC,<br>16 Digital Inputs pnp/npn,<br>including one<br>High-speed Counter,<br>3 Analog Inputs,<br>10-bit, 0-20mA, 4-20mA,<br>15 pnp + 1 pnp/npn Transistor<br>Outputs including 1 HSO | 24VDC,<br>built-in Expansion Module Adapter,<br>16 Digital Inputs, pnp/npn,<br>including two<br>High-speed Counters,<br>3 Analog Inputs 10-bit,<br>0-20mA, 4-20mA,<br>8 Relay Outputs | 24VDC,<br>built-in Expansion Module Adapter,<br>16 Digital Inputs, pnp/npn,<br>including one High-speed Counter,<br>3 Analog Inputs 10-bit,<br>0-20mA, 4-20mA,<br>15 pnp + 1 pnp/npn Transistor<br>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, V1040 and V1210 Vision series models.



| 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/npn (including 2 Shaft-encoder inputs) | 16 npn/npn (including 2 Shaft-encoder inputs) | 18 npn/npn (including 2 Shaft-encoder inputs)                                    | 18 npn/npn (including 2 Shaft-encoder inputs)                                    | 18 npn/npn (including 2 Shaft-encoder inputs) | 18 npn/npn (including 2 Shaft-encoder inputs)                                   | 30 npn/npn (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/npn (including 2 High-speed outputs)    | 4 npn/npn (including 2 High-speed outputs)    | 2 npn/npn High-speed   | 17 npn/npn (including 2 High-speed)  | 15 npn, 2 npn/npn (including 2 High-speed)    | 2 npn/npn High-speed  | 28 npn 2 npn/npn 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  | None  | 2 12-bit 0-10V, 4-20mA isolated   | None  |

<sup>1</sup> V200-18-E6B, V200-18-E62B are 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                                 | Profibus                               |
|--|--|---|--|--|
| V100-17-ET2 (for V130 and V350 series)<br>V200-19-ET1 (for V200, V500, V1040 and V1210 series) | V100-17-RS4 (for V130 and V350 series)<br>V200-19-RS4 (for V200, V500, V1040 and V1210 series) | V100-17-RS4X (for V130 and V350 series)<br>V200-19-RS4-X (for V200, V500, V1040 and V1210 series) | V100-17-CAN (for V130 and V350 series) | V100-17-PB1 (for V130 and V350 series) |

<sup>1</sup> V200/V500/V1040/V1210: 1 optional port for serial or Ethernet  
V130/V350: 1 optional port for serial or Ethernet & 1 optional port for CANbus



|  |  |
|--|--|
| <b>GSM-KIT-14J</b>                         | <b>GSM-KIT-41J</b>                         |
| Kit Including Cinterion TC65 Q. Band Modem | Kit Including Enfora GSM1308 Q. Band Modem |

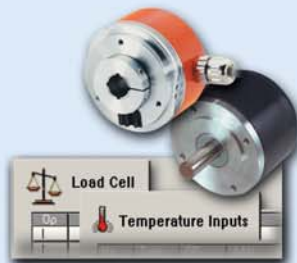


# A single, Integrated Programming Environment - Free of charge!

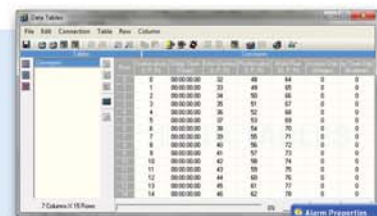
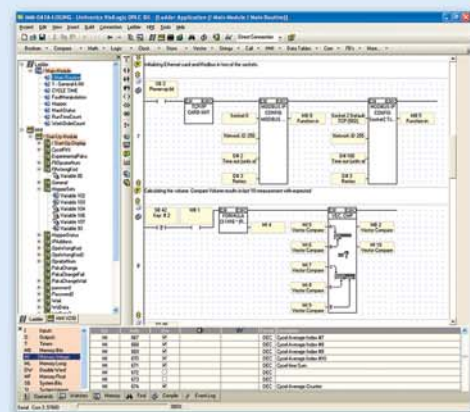


## Easy Hardware Configuration

- Select base PLC
- Configure I/Os



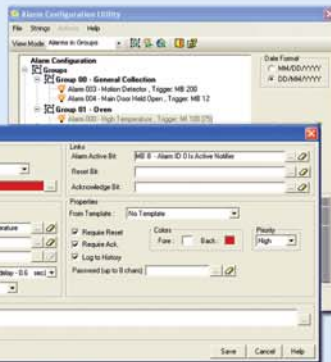
## PLC Editor



## Data Tables: Recipe Control

- Click & Drop Ladder elements
- Modular program function: create & call subroutines
- Built-in function blocks save time & simplify tasks

## Built-in Alarms



## Intuitive HMI Design



## Free Image Library

- Assign functions to HMI keys
- Create and conditionally display operator messages
- Assign "Touch" properties to any screen element
- Use color images and graphs to reflect variable values and Trends

## String Library: instantly switch HMI language

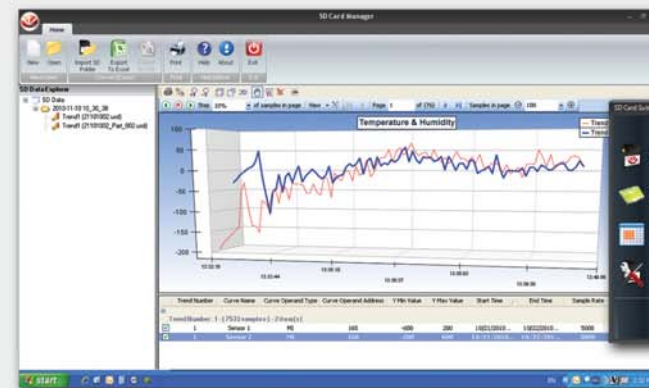


Note that graphic support, String Library, Alarms, and other software features are dependent on PLC model.

# Software Utilities: Added Value - Free of charge!

## Remote Access & Operator:

- PC to PLC access/control via modem or network
- Simultaneously view multiple operator panels



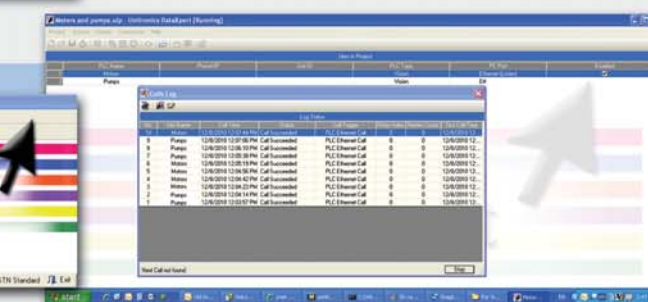
## SD Card Suite:

- Manage data: Trends, Alarms, Data Tables
- Remotely read/write data to SD Card



## DataXport:

- Log run-time/stored Data Table data
- Export data to Excel



**UniOPC/UniDDE Server:** Communicate with SCADA/Windows applications

**UniDownload Manager:** Simultaneously download different programs to many PLCs

**UniVision Licensing:** Protect your Intellectual Property

**ActiveX & .NET communication driver:** Easily implement communication between PLC & PC applications



## Free Technical Support

- When you call Unitronics Technical Support, you speak to an actual Support Team expert
- When you email [support@unitronics.com](mailto:support@unitronics.com), you correspond with Support Team experts
- When you visit <http://forum.unitronics.com>, you get answers from community experts as well as Unitronics' in-house experts

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**Argentina:**  
AEA SACIF  
Tel: 11 457 41 555, Fax: 11 457 42 400  
servicioalcliente@aea.com.ar, www.aea.com.ar



**Australia:**  
Micromax Pty. Ltd.  
Tel: (02) 874 828 00, Fax: (02) 964 832 45  
info@micromaxsa.com.au, www.micromaxsa.com.au



**Austria:**  
Schmachtil GmbH  
Tel: 0732/7646-0, Fax: 0732/7646-704  
office@schmachtil.at, www.schmachtil.at



**Belgium:**  
Isotron Systems BVBA  
Tel: 03 450 70 45, Fax: 03 450 70 46  
info@isotron.eu, www.isotron.eu



**Brazil:**  
DAKOL Instrumentos e Sistemas Ltda.  
Tel: (11) 3231 4544, Fax: (11) 3231 4544  
info@dakol.com.br, www.dakol.com.br



**Bulgaria:**  
Semo Ltd.  
Tel: 2 942 4754, Fax: 2 942 4762  
engineering@semo.bg, www.semo.bg



**Canada:**  
Sandtron Automation Limited  
Tel: 800 387 5729, Fax: 905 331 8300  
dani@sandtron.com, www.sandtron.com



**Chile:**  
E.i.Schadler y Cia Ltda.  
Tel: (2) 274 7430, Fax: (2) 204 9338  
info@schadler.com, www.schadler.com



**China:**  
Konder Co, Ltd.  
Tel: 08 713 628 710, Fax: 08 713 638 622  
KM@konder.com, www.konder.com



**China:**  
Automate Control Engineering Ltd.  
Tel: 02 038 845 119, Fax: 02 038 823 577  
Guangzhou@automate-ace.com, www.automate-ace.com



**Colombia:**  
Colsein Ltda.  
Tel: 1 610 84 48 / 236 76 59, Fax: 1 610 8448  
info@colsein.com.co, www.colsein.com.co



**Croatia:**  
Tipteh d.o.o. (Slovenia)  
Tel: +386 1 200 5150, Fax: +386 1 200 5151  
info@tipteh.si, www.tipteh.si



**Cyprus:**  
Anaxagoras Pneumatics Ltd.  
Tel: +357 22 442 200, Fax: +357 22 495 953  
info@anaxagoras.eu, www.anaxagoras.eu



**Czech Republic:**  
Schmachtil CZ, spol. s r.o.  
Tel: 2 44 001 500, Fax: 2 44 910 700  
tesar@schmachtil.cz, www.schmachtil.cz



**Denmark:**  
Desim Elektronik ApS  
Tel: 70 22 00 66, Fax: 70 22 22 20  
desim@desim.dk, www.desim.dk



**Estonia:**  
Klinkmann Eesti AS  
Tel: 6 684 500, Fax: 6 684 501  
klinkmann.est@klinkmann.ee, www.klinkmann.com



**Finland:**  
Klinkmann Automation Oy  
Tel: 9 540 49 40, Fax: 9 541 35 41  
automation@klinkmann.fi, www.klinkmann.com



**France:**  
PL Systems  
Tel: (0) 1 60 92 41 71, Fax: (0) 1 69 28 41 93  
info@pl-systems.fr, www.pl-systems.fr



**Germany:**  
Spectra Computersysteme GmbH  
Tel: 0 71 21/ 143 21-0, Fax: 0 71 21/ 143 21-90  
spectra@spectra.de, www.spectra.de



**Greece:**  
Automation & Power Control Ltd  
Tel: 210 531 3111, Fax: 210 598 1435  
info@apc.com.gr, www.apc.com.gr



**Hong Kong:**  
Automate Control Engineering Ltd.  
Tel: 02 342 72 76, Fax: 02 342 72 29  
www.automate-ace.com, ace@automate.corp.com.hk



**Honduras:**  
Electrical Dealer  
Tel: 558 1400, Fax: 557 9709  
info@electrical-dealer.com, www.electrical-dealer.com



**Hungary:**  
Kvalix Automatika Kft.  
Tel: (1) 272 2242, Fax: (1) 272 2244  
info@kvalix.hu, www.kvalix.hu



**India:**  
Rajdeep Automation Pvt Ltd  
Tel: 020-243 937 55, Fax: 020 243 937 56  
sales@rajdeep.in, info@rajdeep.in, www.rajdeep.in



**Ireland:**  
Automated Components Ireland Ltd (ACI)  
Tel: 01 628 2824, Fax: 01 628 3536  
ddownes@auto-comp-irl.com, www.auto-comp-irl.com



**Israel:**  
Zivan Instruments Co. Ltd.  
Tel: 04 872 98 22, Fax: 04 872 66 27  
info@zivan.co.il, www.zivan.co.il



**Italy:**  
TELESTAR s.r.l.  
Tel: 02 967 402 68, Fax: 02 967 402 73  
telestar@telestar-automation.it, www.telestar-automation.it



**Latvia:**  
Klinkmann Lat Ltd.  
Tel: 738 16 15, Fax: 738 24 51  
klinkmann@klinkmann.lv, www.klinkman.com



**Lithuania:**  
Klinkmann Lit  
Tel: 5 216 2572, Fax: 5 216 2641  
post@klinkmann.lt, www.klinkmann.com



**Macedonia:**  
Tipteh d.o.o. Skopje  
Tel: 070 399 474, Fax: 317 4197  
tipteh@on.net.mk, www.tipteh.si



**Malaysia:**  
Yewtech SDN BHD  
Tel: 168 761 575, Fax: 856 112 99  
sales@yewtech.com, www.yewtech.com



**Mexico:**  
Sistemas de Control Autec, S.A. de C.V.  
Tel: 55 527 885 19, Fax: 55 527 885 32  
soporte@scautec.com, www.scautec.com



**The Netherlands:**  
Isotron Systems BV  
Tel: 073 639 1639, Fax: 073 639 1699  
info@isotron.nl, www.isotron.nl



**New Zealand:**  
EMC Industrial Group Ltd.  
Tel: 9 415 5110, Fax: 9 415 51 15  
sales@emc.co.nz, www.emc.co.nz



**Nigeria:**  
Technosuite Limited  
Tel: +234 1 804 0237, Fax: +234 1 271 6985  
enquiries@technosuitehd.com, www.technosuitehd.com



**Norway:**  
Tormatic as  
Tel: 33 16 50 20, Fax: 33 16 50 45  
info@tormatic.no, www.tormatic.no



**Peru:**  
EPLI SAC  
Tel: (511) 330 1595, Fax: (511) 431 1492  
info@epli.com.pe, www.epli.com.pe



**Philippines:**  
Cosine Industries INC  
Tel: 2 350 74 48, Fax: 2 412 73 21  
sales@cosine.com.ph, www.cosine.net.ph



**Poland:**  
Elmark Automatyka Sp. zo.o.  
Tel: 22 541 84 60, Fax: 22 541 84 61  
elmark@elmark.com.pl, www.elmark.com.pl



**Portugal:**  
Tecnilab Portugal, SA  
Tel: 21 722 08 70, Fax: 21 726 45 50  
geral@tecnilab.pt, www.tecnilab.pt



**Romania:**  
Syscom 18 SRL  
Tel: 40 213 10 26 78/79, Fax: 40 21 31 691 76/79  
valentin.andronache@syscom18.com, www.syscom.ro



**Russia:**  
Klinkmann SPB  
Tel: 812 327 37 52, Fax: 812 327 37 53  
klinkmann@Klinkmann.spb.ru, www.klinkmann.com  
ZAO Klinkmann Spb  
Tel: 8 495 641 1100, Fax: 8 495 641 3434  
moscow@klinkmann.spb.ru, www.klinkmann.com



**Serbia:**  
ACE-Automatic Control Engineering  
Tel: 023 523 948, Fax: 023 525 553  
info@ace.rs, www.ace.rs



**Singapore:**  
SciGate Automation (s) Pte Ltd  
Tel: (65) 656 104 88, Fax: (65) 656 205 88  
sales@scigate.com.sg, www.scigate.com.sg



**Slovakia:**  
S.D.A. s.r.o.  
Tel: 1 48 472 34 11, Fax: 1 48 472 34 69  
sekretariat@s-d-a.sk, www.s-d-a.sk



**Slovenia:**  
Tipteh d.o.o.  
Tel: (1) 200 51 50, Fax: (1) 200 51 51  
info@tipteh.si, www.tipteh.si



**South Africa:**  
Vision Automation  
Tel: 011 826 7365, Fax: 086 557 2558  
info@visionautomation.co.za, www.unitronics.co.za



**Spain:**  
SIDE, SA  
Tel: 93 846 4801, Fax: 93 849 1394  
elec@side.es, www.side.es



**Sweden:**  
SensorGruppen AB  
Tel: 08 731 5190, Fax: 08 731 5105  
info@sensorgruppen.se, www.sensorgruppen.se



**Switzerland:**  
COMAT AG Industrielle Elektronik  
Tel: (0) 31 838 55 77, Fax: (0) 31 838 55 99  
info@comat.ch, www.comat.ch



**Taiwan:**  
MARK Automation Technologies Inc.  
Tel: 02 235 109 92, Fax: 02 235 818 35  
products@marktch.com.tw, www.marktek.com.tw



**Thailand:**  
Themtech Company Ltd.  
Tel: (662) 693 66 29, Fax: (662) 693 66 30  
themtech@ksc.th.com



**Turkey:**  
Yorum Otomatik Kontrol  
Tel: +90 212 210 94 95, Fax: +90 212 210 94 99  
yorum@yorum-automation.com, www.yorum-automation.com



**Ukraine:**  
Klinkmann Ukraine LLC  
Tel: 44 495 33 40, Fax: 44 495 33 41  
klinkmann.kiev@klinkmann.kiev.ua, www.klinkmann.com



**United Kingdom:**  
Local UK distributors: contact Unitronics Ltd.  
Tel (Israel): +972 3 977 88 95, Fax: +972 3 977 88 77  
export@unitronics.com, www.unitronics.com



**USA: Unitronics Inc.**  
Toll free: 866 666 6033  
Tel: 617 657 6596, Fax: 617 657 6598  
usa.sales@unitronics.com, www.unitronics.com



**Venezuela:**  
Intrave, C.A.  
Tel: 0212 953 5080, Fax: 0212 951 2521  
ventas@intrave.com, www.intrave.com



**Vietnam (North):**  
Q Systems Ltd.  
Tel: 04 976 0144, Fax: 04 976 0145  
qsystems@hn.vnn.vn, www.qsystemsco.com



**Vietnam (South):**  
Hung Giang Co, Ltd  
Tel: +84 (08) 365 74 788, Fax: +84 (08) 365 74 799  
satech-uv@hcm.vnn.vn