Vision130™ Graphic OPLC™

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

Vision130™ Series Featuring:

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

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

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

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

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

Article Number	V130-33-B1	V130-33-TR20	V130-33-R34	V130-33-TR34	V130-33-TR6 (New!*)	V130-33-RA22	V130-33-TRA22 (New!*)	V130-33-T2	V130-33-T38	V130-33-TA24
	No onboard I/Os	10 Digital 2 D/A Inputs[1] 6 Relay Outputs 2 High-speed Transistor Outputs	20 Digital 2 D/A Inputs[1] 12 Relay Outputs	20 Digital 2 D/A Inputs[1] 8 Relay 4 High-speed Transistor Outputs	6 Digital, 2 D/A 4 Analog Inputs[1] 6 Relay Onputs 2 High-speed Transistor Outputs	8 Digital 2 D/A, 2 PT100/TC/ Digital[1] Inputs 8 Relay 2 Analog Outputs	8 Digital, 2 D/A 2 PT100/TC/ Digital[1] Inputs 4 Relay, 2 Analog 4 High-speed Transistor Outputs	10 Digital 2 D/A Inputs[1] 12 Transistor Outputs	20 Digital 2 D/A Inputs[1] 16 Transistor Outputs	8 Digital 2 D/A, 2 PT100/ TC/Digital[1] Inputs 10 Transistor 2 Analog Outputs
Inputs										
Digital pnp/npn	None	12	22	22	8	12	12	12	22	12
HSC/Shaft-Encoder/ Max. Freq. Measurer[2&3]		3 200kHz[4] 32-bit	3 30kHz 32-bit	3 200kHz[4] 32-bit	1 200kHz[4] 32-bit	1 30kHz 32-bit	1 200kHz[4] 32-bit	3 30kHz 32-bit	2 30kHz 32-bit	1 30kHz 32-bit
Analog		2 10-bit, 0-10V 0-20mA 4-20mA	2 10-bit, 0-10V 0-20mA 4-20mA	2 10-bit, 0-10V 0-20mA 4-20mA	6 10-bit 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
Outputs										
Digital		6 relay	12 relay	8 relay	6 relay	8 relay	4 relay	12 pnp	16 pnp	10 pnp
High-Speed Outputs/PWM		2 npn (2 PTO) 200kHz max	None	4 npn (3 PTO) 200kHz max	2 npn (2 PTO) 200kHz max	None	2 npn (2 PTO) 200kHz max	7 0.5kHz	7 0.5kHz	5 0.5kHz
Analog		None	None	None	None	2 12-bit 0-10V, 4-20mA	2 12-bit 0-10V, 4-20mA	None	None	2 12-bit 0-10V, 4-20mA
I/O Expansion										
	Local or Remote I/Os may be added via expansion port or via CANbus									
Program										
Application Memory	Application Logic: 512K • Images: 256K • Fonts: 128K									
Scan Time	20μ sec per 1K of typical application									
Memory Operands	4096 coils, 2048 registers, 256 long integers (32-bit), 64 double words (32-bit unsigned), 24 floats, 192 timers (32-bit), 24 counters. Additional non-retainable operands: 1024 X-bits, 512 X-integers, 256 X-long integers, 64 X-double words									
Data Tables	120K dynamic RAM data (recipe parameters, datalogs, etc.), up to 256K Flash data									
SD Card (Micro)	Store datalogs, Alarm History, Data Tables, Trend data, export to Excel • Back up Ladder, HMI & OS, clone PLCs									
Enhanced Features	Trends: graph any value and display on HMI • Built-in Alarm management system • String Library: instantly switch HMI language									
Operator Panel										
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)									
General										
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)									

[1] 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.

[2] Certain inputs can function as high-speed counters, shaft-encoder inputs, or normal digital inputs.

[3] This specification depends on cable length.

[4] This specification depends upon driver type.

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

I/O Expansion Modules

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

Digital Modules

IO-DI8-TO8	IO-DI8-RO4	IO-DI8-RO8	EX90-DI8-RO8[3]	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
24VDC 16 pnp Transistor Outputs	24VDC (power supply) 8 Relay Outputs	24VDC (power supply) 16 Relay Outputs	110/220 VAC 8 AC Inputs

CE / UL

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: $-50^0C \div 460^0C$ $(-58^0F \div 860^0F)$ Range NI100: $-50^0C \div 232^0C$ $(-58^0F \div 449^0F)$ Range NI120: $-50^0C \div 172^0C$ $(-58^0F \div 341^0F)$ 12-bit	4 PT1000/NI1000 Inputs Range PT1000: $-50^0C \div 460^0C$ $(-58^0F \div 860^0F)$ Range NI1000: $-50^0C \div 232^0C$ $(-58^0F \div 449^0F)$ 12-bit

IO-AO6X	IO-LC1[4] IO-LC3[4]	IO-ATC8	IO-AI8[6]
24VDC (power supply) 6 Isolated Analog Outputs 0-10V, 0-20mA, 4-20mA 12-bit	12/24VDC (Power Supply) 1-3 Loadcell / Strain gauge Inputs Input voltage ranges: ± 20mV, ±80mV Excitation: AC/DC 1 Digital pnp Input 2 pnp Outputs Not supported by all OPLCs™	8 Thermocouple/ Analog Inputs T/C J, K, T, B, E, N, R, S, 0.1^0 Resolution, 0-10V, 0-20mA, 4-20mA, 12/14-bit	8 Analog Inputs $0 \div 10V$ / $0 \div 20mA$ 14-bit

I/O Expansion Module Adapters

EX-A2X[1]
Local I/O module adapter. Galvanic isolation. Up to 8 modules may be connected to a single PLC[1]. Supports both 12/24 VDC

EX-RC1[5]
Remote I/O module adapter, via CANbus. Multiple adapters may be connected to a single PLC, with up to 8 modules to each adapter[1]. Supports both 12/24 VDC.

[1] Number of I/Os may vary according to module
[2] Except for M90-19-B1A
[3] 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.
[4] IO-LCx models are supported by the M91 & Vision series. Not supported by the M90 series.
[5] EX-RC1 is supported by Vision series. Not supported by M91 series.
[6] Not yet UL certified.

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

XL Digital/Analog Modules[6]

IO-D16A3-RO16	IO-D16A3-TO16	EX-D16A3-RO8	EX-D16A3-TO16
24VDC, 16 Digital Inputs pnp/npn, including two High-speed Counters, 3 Analog Inputs, 10-bit, 0-20mA, 4-20mA, 16 Relay Outputs	24VDC, 16 Digital Inputs pnp/npn, including one High-speed Counter, 3 Analog Inputs, 10-bit, 0-20mA, 4-20mA, 15 pnp + 1 pnp/npn Transistor Outputs including 1 HSO	24VDC, built-in Expansion Module Adapter, 16 Digital Inputs, pnp/npn, including two High-speed Counters, 3 Analog Inputs 10-bit, 0-20mA, 4-20mA, 8 Relay Outputs	24VDC, built-in Expansion Module Adapter, 16 Digital Inputs, pnp/npn, including one High-speed Counter, 3 Analog Inputs 10-bit, 0-20mA, 4-20mA, 15 pnp + 1 pnp/npn Transistor Outputs including 1 HSO

Snap-in I/O Modules

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

New!

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

[1] V200-18-E6B, V200-18-E62B is not yet UL certified

Additional COM Module

Use these modules to enhance Vision's communication capabilities[1]

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

[1] V200/V500/V1040: 1 optional port for serial or Ethernet,
V130/V350: 1 optional port for serial or Ethernet & 1 optional port for CANbus

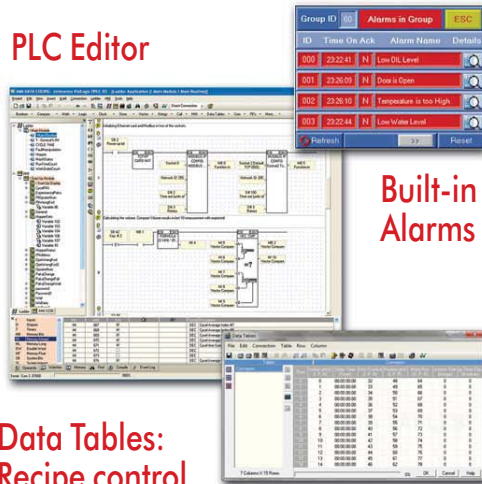# A single, integrated programming environment - Free of charge!

Easy Hardware Configuration

- Select base PLC
- Configure I/Os
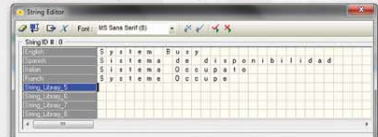
PLC Editor

Built-in Alarms

Data Tables: Recipe control

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

Intuitive HMI Design

String Library: instantly switch HMI language

Image Library

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

* Note that graphics are supported by the Vision series;
(Touch Library, & Alarms are supported by the Enhanced features, String Vision series.)
* Note that software features are PLC model-dependent

Software Utilities: Added Value - Free of charge!

Remote Access & Operator:
PC to PLC access/control via modem or network, view multiple operator panels
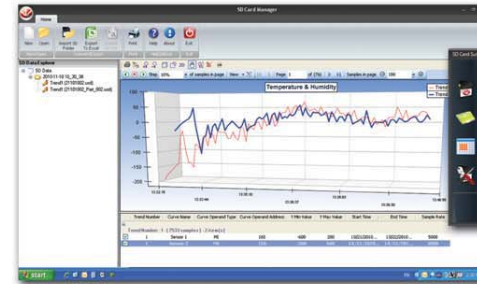
SD Card Suite:
Manage data— Trends, Alarms, Data Table; remotely read/write data to SD Card

DataXport:
Log run-time/stored Data Table data, export to Excel
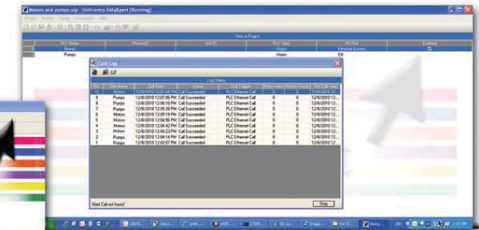
- UniOPC/UniDDE Server: Communicate with SCADA/Windows applications
- UniDownload Manager: Download multiple, compressed PLC applications simultaneously
- UniVision Licensing: Protect your Intellectual Property
- ActiveX & .NET communication driver - Easily implement communication between PLC and PC applications

Free Technical Support
When you call Unitronics Technical Support, you speak to an actual Support Team expert
When you email 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