VISION 1210™/1040™

Advanced PLC from the back-big & beautiful color touchscreen from the front, 12.1" /10.4". Snap-in I/Os for an All-in-One; expand up to 1000 I/Os

Features:

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
- Memory and communication monitoring via HMI - 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
- Date & Time-based control

Communication

- TCP/IP via Ethernet
- 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
- Remote Access utilities
- MODBUS protocol support
- CANbus: CANopen, UniCAN, SAE J1939 and more
- DF1 Slave
- SNMP agent V1
- FB Protocol Utility: enables serial or TCP/IP communications with 3rd-party device; barcode readers, frequency converters, etc
- Ports: supplied with 2 isolated RS232/RS485, 1 CANbus, 1 USB programming port; 1 port may be added for serial/Ethernet

V1210
Flat Panel

V1040
Classic Panel

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> “I’ve not yet encountered a job that a Unitronics PLC was unable to cover.”
>
> **Timothy Moulder,**
> Engineer at Black & Decker

CE/UL

	V1040	V1210
Article Number	V1040-T20B	V1210-T20BJ
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 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	
Program		
Application Memory	Application Logic: 2MB • Images: 32MB • Fonts: 1MB	
Scan Time	9µsec per 1K of typical application	
Memory Operands	8192 coils, 4096 registers, 512 long integers (32 bit), 256 double words (32 bit unsigned), 64 floats, 384 timers (32 bit), 32 counters Additional non-retainable operands: 1024 X-bits, 512 X-integers, 256 X-long integers, 64 X-double words	
Data Tables	120K dynamic RAM data (recipe parameters, datalogs, etc.), up to 256K fixed 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	
Operator Panel		
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	
Keys	9 programmable function keys	Virtual Keyboard
General		
Power Supply	12/24VDC	
Battery	7 years typical at 25°C, battery back-up for all memory sections and RTC	
Clock	Real-time clock functions (date and time)	
Environment	IP65/NEMA4X (when panel mounted)	IP66/IP65/NEMA4X (when panel mounted)
Standard	CE, UL Many of our products are also UL Class 1 Div 2 and GOST certified - please contact Unitronics	

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Vision™ OPLC™

Technical Specifications
V1210-T20BJ Art. No. 126642

V1210 OPLCs are programmable logic controllers that comprise a built-in operating panel containing a 12.1" Color Touchscreen.
You can find additional documentation on the Unitronics' Setup CD and in the Technical Library at www.unitronics.com.

Technical Specifications

Power Supply

Input voltage	12 or 24VDC
Permissible range	10.2-28.8VDC
Max. current consumption	1A@12V 0.5A@24V

Battery

Back-up	7 years typical at 25°C, battery back-up for RTC and system data, including variable data.
Replaceable	Yes, without opening the controller.

Graphic Display Screen

See Note 1

LCD Type	TFT
Illumination backlight	White LED
Display resolution, pixels	800x600 (SVGA)
Viewing area	12.1"
Colors	65,536 (16-bit)
Touchscreen	Resistive, analog
'Touch' indication	Via buzzer
Screen brightness	Via software (Store value to SI 9).
Keypad	Displays virtual keyboard when the application requires data entry.

Notes:

1. Note that the LCD screen may have a single pixel that is permanently either black or white.

Program

Memory size: Application Logic – 2MB, Images – 32MB, Fonts – 1MB

Operand type	Quantity	Symbol	Value
Memory Bits	8192	MB	Bit (coil)
Memory Integers	4096	MI	16-bit
Long Integers	512	ML	32-bit
Double Word	256	DW	32-bit unsigned
Memory Floats	64	MF	32-bit
Timers	384	T	32-bit
Counters	32	C	16-bit

Data Tables	120K dynamic RAM data (recipe parameters, datalogs, etc.) Up tp 256K Flash data
HMI displays	Up to 1024
Program scan time	9 µsec per 1K of typical application

Removable Memory

Micro-SD card	Compatible with fast micro-SD cards; store datalogs, Alarms, Trends, Data Tables, backup Ladder, HMI, and OS. See Note 2

Notes:

2. User must format via Unitronics SD tools utility.

Communication

Serial ports	2. See Note 3
RS232	
Galvanic isolation	Yes
Voltage limits	±20VDC absolute maximum
Baud rate range	300 to 115200 bps
Cable length	Up to 15m (50')
RS485	
Galvanic isolation	Yes
Voltage limits	–7 to +12VDC differential maximum
Baud rate range	300 to 115200 bps
Nodes	Up to 32
Cable type	Shielded twisted pair, in compliance with EIA RS485
Cable length	1200m maximum (4000')
USB	See Note 4
Port type	Mini-B
Galvanic isolation	No
Specification	USB 2.0 compliant; full speed
Baud rate range	300 to 115200 bps
Cable	USB 2.0 compliant; up to 3m

CANbus port	1
Nodes	CANopen: 127 / Unitronics' CANbus protocols: 60
Power requirements	24VDC (±4%), 40mA max. per unit. See Note 5
Galvanic isolation	Yes, between CANbus and controller
Cable length/baud rate See Note 5	25 m / 1 Mbit/s 100 m / 500 Kbit/s 250 m / 250 Kbit/s 500 m / 125 Kbit/s 500 m / 100 Kbit/s 1000 m* / 50 Kbit/s 1000 m* / 20 Kbit/s
Optional port	User may install a single Ethernet port, or an RS232/RS485 port. Available by separate order.

* If you require cable lengths over 500 meters, contact technical support.

Notes:

3. The standard for each port is set to either RS232/RS485 according to DIP switch settings. Refer to the Installation Guide.
4. The USB port may be used for programming, OS download, and PC access. Note that COM port 1 function is suspended when this port is physically connected to a PC.
5. Supports both 12 and 24VDC CANbus power supply, (±4%), 40mA maximum per unit. Note that if 12 VDC is used, the maximum cable length is 150 meters.

I/Os

	Number of I/Os and types vary according to module. Supports up to 1024 digital, high-speed, and analog I/Os.
Snap-in I/O modules	Plugs into rear port to create self-contained PLC with up to 62 I/Os.
Expansion modules	Local adapter (P.N. EX-A1), via I/O Expansion Port. Integrate up to 8 I/O Expansion Modules comprising up to 128 additional I/Os.
	Remote adapter (P.N. EX-RC1), via CANbus port. Connect up to 60 adapters; connect up to 8 I/O expansion modules to each adapter.
Exp. port isolation	Galvanic

Dimensions

Size	313.1X244.6X59.1mm (12.32"X9.62"X2.32"). See Note 6
Weight	1.7kg (60 oz)

Notes:

6. For exact dimensions, refer to the product's Installation Guide.

Mounting

Panel-mounting	Via brackets

Environment

Inside cabinet	IP20 / NEMA1 (case)
Panel mounted	IP65/66/NEMA4X (front panel)
Operational temperature	0 to 50ºC (32 to 122ºF)
Storage temperature	-20 to 60ºC (-4 to 140ºF)
Relative Humidity (RH)	5% to 95% (non-condensing)

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