Vision120™

A palm-sized PLC with an embedded graphic display & keypad

PLC Side:

► **Onboard Inputs:** Digital (including Shaft-encoders), Analog, Thermocouple or PT100

► **Onboard Outputs:** Analog, Relay or Transistor, including high-speed/PWM

► **Up to 128 additional I/Os**, via a variety of expansion modules, including temperature measurement and Loadcell (number of I/Os may vary according to model)

► **Two RS232/485 ports**

► **Built-in multiple PID loops**, including auto-tune

► **Windows-based Ladder Logic software**

► **Application Memory: 448K**

► **Scan time:** 48µsec per 1K of typical application

► **Mounting:** Panel or DIN-rail

HMI Side:

► **Display images, text and graphs** according to run-time conditions and historical values

► **Up to 255 user-designed displays**

► **24 variables per display;** up to 150 messages/images can be linked to each variable

► **Use hundreds of images in one application**

► **Graphic display screen:** 128 x 64 pixels

► **Text messages:** Up to 8 lines x 22 characters

► **LCD illuminated screen**

► **16-key keypad**

The Vision120™ standard package includes software, communication cable, connectors and documentation.

VisiLogic Ladder Software

One Windows-based program for both PLC & HMI
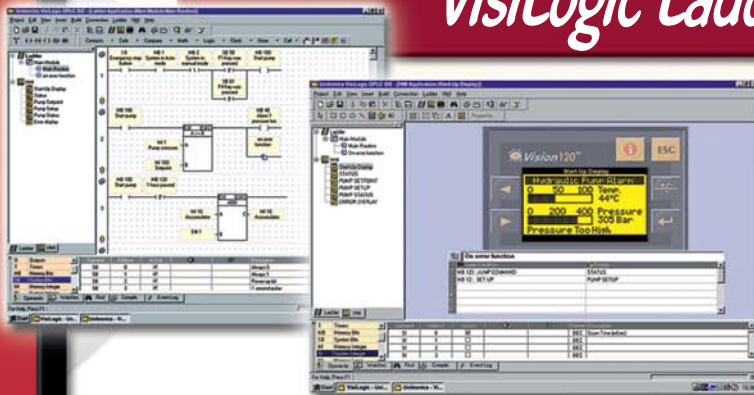
PLC editor:

■ Click & drop Ladder elements

■ Modular program function; create subroutines and call them from anywhere in your program

■ Built-in Function Blocks & utilities save application capacity and cut programming time

■ Embedded modem support for remote access and SMS messaging

HMI editor:

■ Import any image (according to screen resolution)

■ Design .bmps with the HMI editor

■ Create and display text messages

■ Use images to represent changing or static values

■ Trend graphs display dynamic variable values & show historical trends

■ Assign functions to keys

Networking and Communication

SMS Control

The Vision120™ can send and receive SMS messages to/from any GSM/CDMA cellular phone.

You can send text and variable SMS messages to modify parameters in your system. The controller can auto-acknowledge the message and answer your data requests.

The Vision120™ can send text and variable messages to many different GSM/CDMA phone numbers, to alert or report of any pre-defined event.

Remote Access utilities

Download, upload and debug remote Vision120™ units, operate the controllers, and export application data (including database) to PC, via network connections, or via GPRS/GSM/CDMA/landline modem.

MODBUS

Establish master/slave MODBUS communication via two RS232/485 ports.

OPC Server / DDE Server

Unitronics' OPC and DDE Servers enable the Vision120™ to exchange data with any Windows-based application.

CANbus (CANbus models only)

CANopen Communicate with remote devices, ranging from simple, fast I/O-related devices such as encoders, to complex frequency converters. Compliant with CiA DS 301.

UniCAN Integrate up to 60 units into a high-speed network, using Unitronics' protocol.

Additional Communication Protocols

The "Protocols" Function Block enables Vision120™ to communicate with a broad variety of external devices, such as bar-code readers, printers & servos.

More Features

Up to 12 PID loops including Auto-tune

Up to 3 onboard Shaft-encoder Inputs, 10 kHz

2 High-speed Outputs, up to 2 kHz (in transistor Output models)

Selection of 22 I/O expansion modules includes Digital and Analog I/Os, Thermocouple, PT100, and Loadcell Inputs

Images library plus HMI images & text editors

Built-in 120K database enables dynamic data logging

Information Mode: Powerful diagnostics via the Operator Panel

MODE3: WEEKEND
MODE2: NORMAL
MODE1: RUSH HOUR
QUANTITY: 200 l/h
MIN. LEVEL: 120cm
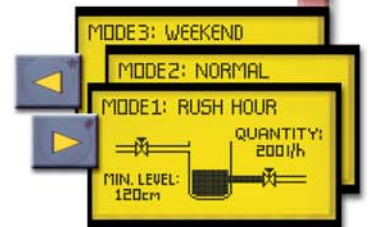
Easy scrolling between recipes/menus, via HMI "List" Variables

Technical Specifications

	V120-22-R1	V120-22-R34	V120-22-R2C	V120-22-R6C	V120-22-T2C	V120-22-T1	V120-22-T38[1]	V120-22-UN2	V120-22-UA2	V120-22-RA22
	10 Digital Inputs 6 Relay Outputs 1 Analog Input	20 Digital Inputs 2 Analog/Digital Inputs[2] 12 Relay Outputs	10 Digital Inputs 6 Relay Outputs 2 Analog Inputs	6 Digital Inputs 6 Relay Outputs 6 Analog Inputs	10 Digital Inputs 12 Transistor Outputs 2 Analog/Digital Inputs[2]	12 Digital Inputs 12 Transistor Outputs	22 Digital Inputs 16 Transistor Outputs	10 Digital Inputs 12 Transistor Outputs 2 PT100/TC/Analog/Digital Inputs[2]	10 Digital Inputs 10 Transistor Outputs 2 TC/Analog/Digital Inputs[2] 2 Analog Outputs	8 Digital Inputs 8 Relay Outputs 2 Analog/Digital Inputs[2] 2 PT100/TC/Digital Inputs[2] 2 Analog Outputs

I/Os

	R1	R34	R2C	R6C	T2C	T1	T38	UN2	UA2	RA22
Digital Inputs	10 pnp/npn (source/sink) 12/24VDC	22[2] pnp/npn (source/sink) 24VDC	10 pnp/npn (source/sink) 12/24VDC	6 pnp/npn (source/sink) 24VDC	12[2] pnp/npn (source/sink) 12/24VDC	12 pnp/npn (source/sink) 12/24VDC	22 pnp/npn (source/sink) 24VDC	12[2] pnp/npn (source/sink) 12/24VDC	12[2] pnp/npn (source/sink) 24VDC	12[2] pnp/npn (source/sink) 24VDC
HSC/Shaft-encoder/Freq. Measurer[3]	Three 10 kHz 32 bit resolution	Three 10 kHz 32 bit resolution	Three 10 kHz 32 bit resolution	One 10 kHz 32 bit resolution	Three 10 kHz 32 bit resolution	Two 10 kHz 32 bit resolution	Two 10 kHz 32 bit resolution	Two 10 kHz 32 bit resolution	One 10 kHz 32 bit resolution	One 10 kHz 32 bit resolution
Analog Inputs	One 10 bit input: 0-10V, 0-20mA, 4-20mA	Two[2] 10 bit inputs: 0-10V, 0-20mA, 4-20mA	Two 10 bit input: 0-10V, 0-20mA, 4-20mA	Six 10 bit input: Two 0-10V, 0-20mA, 4-20mA, Four 0-20mA, 4-20mA	Two[2] 10 bit inputs : 0-10V, 0-20mA, 4-20mA	None	None	Two[2] 14 bit inputs: 0-10V, 0-20mA, 4-20mA	Two[2] 14 bit inputs : 0-10V, 0-20mA, 4-20mA	Two[2] 14 bit inputs : 0-10V, 0-20mA, 4-20mA and
Temperature Measurment	None	None	None	None	None	None	None	Two[2] PT100 or Thermocouple inputs	Two[2] Thermocouple inputs	Two[2] PT100 or Thermocouple inputs
Digital Outputs	6 relay outputs	12 relay outputs	6 relay outputs	6 relay outputs	12 pnp (source)	12 pnp (source)	16 pnp (source)	12 pnp (source)	10 pnp (source)	8 relay outputs
High-speed Outputs	None	None	None	None	First 2 outputs can function as HSO, 2 kHz maximum, PWM					None
Analog Outputs	None	None	None	None	None	None	None	None	Two 12 bit Outputs: 0-10V, 4-20mA	Two 12 bit Outputs: 0-10V, 4-20mA
I/O Expansions	Up to 128 I/Os may be added via I/O expansion port (number of I/Os may vary according to expansion model)									

Operator panel

Display	128 x 64 pixels, Graphic STN LCD, LED backlight
HMI Displays	Up to 255
Keyboard	16 programmable sealed membrane keys

Program

Application Memory	448K
Bits/Coils	4096
Integers/Registers	2048
Long Integers	256 (32 bit)
Double Word	64 (32 bit unsigned)
Floats	24
Timers	192 (32 bit)
Counters	24
Data Tables	120K dynamic data (recipe parameters, datalogs, etc.), 120K fixed data (read-only data, ingredient names, etc.)
Scan Time	48μsec per 1K of typical application

Communication

	R1	R34	R2C / R6C	T2C	T1	T38	UN2	UA2	RA22
RS232/RS485	2 RS232/485 ports (selectable)								
MODBUS	Supports MODBUS protocol, Master/Slave								
GPRS	Use a GPRS modem to establish a Vision-PC data connection via Internet, and transmit IP packets of data over the cellular network. SMS-enabled								
GSM/CDMA	SMS messages to/from any quantity of phone numbers, Remote Access-enabled								
CANbus Port	None	None	Yes	None	None	None	None	None	None
CANopen	None	None	CANopen Master, supports PDO, SDO, NMT. CiA DS 301	None	None	None	None	None	None
UniCAN	None	None	Multi-master CANbus. Network up to 60 controllers and transfer up to 1024 bytes per program scan	None	None	None	None	None	None

General

	R1	R34	R2C	R6C	T2C	T1	T38	UN2	UA2	RA22
PID	Up to 12 independent PID loops, including internal auto-tune, ramp-soak programmer and bumpless transfer (up to 32 loops without auto-tune)									
Power Supply	12/24VDC	24VDC	12/24VDC	24VDC	12/24VDC	12/24VDC	24VDC	12/24VDC	24VDC	24VDC
Clock (RTC)	Real-time clock functions (date and time)									
Battery Back-up	7 years typical at 25°C									
Dimensions	96 x 96 x 64 mm (3.78" x 3.78" x 2.52")									
Environment	IP65/NEMA4X (from panel, when mounted)									

[1] V120-22-T38 is not yet UL certified

[2] In these models certain inputs are adaptable, and can function as either digital, analog, thermocouple or PT100 (model-dependent). 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.

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

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