

Features:

HMI

- Size: 3.5", 4.3", 7"
- High quality color touchscreen
- Multi-language display
- Built-in Alarm Screens

PLC

- I/O options include digital, analog, and high speed
- Auto-tune PID, up to 2 independent loops
- Recipe programs and data logging via data tables
- Function Blocks

Communication

Built-in ports:

- 1 Mini USB for programming for 4.3" & 7" models,
- 1 RS232 for 3.5" model

Add-on ports:

- 1 Serial/Ethernet
- 1 CANbus

Protocols:

- MODBUS TCP
- SNMP V1
- CANopen, UniCAN, CANlayer2
- BACnet, KNX and M-Bus via gateway
- FB Protocol: for any 3rd party protocol

General Features:

- E-mail & SMS
- 3G Modem support
- Remote access utilities

Full-function PLC with built-in, high-resolution full-color touch screen and built-in I/O configuration. Great look, incredible price.



SAMBA 3.5"



SAMBA 4.3"



SAMBA 7"

SAMBA			
Article Number	SAMBA 3.5	SAMBA 4.3	SAMBA 7
I/O Options			
Total supported I/Os	22		
Built-in	According to model (See Built-in I/Os table below)		
I/O Expansion	-		
Remote I/O Expansion	Use EX-RC1 adapters to further extend the number of I/Os ¹		
COM Modules	Fit up to 1 CANbus, 1 RS232/RS485 ³ or 1 Ethernet		
Program			
Application Memory	Application Logic: 80KB • Images: 1.5 MB • Fonts: 320 KB	Application Logic: 192KB • Images: 3 MB • Fonts: 320 KB	Application Logic: 192KB • Images: 8 MB • Fonts: 512 KB
Scan Time	15µS per 1K of typical application		
Memory Operands	512 coils, 256 registers, 32 long integers (32-bit), 32 double words (32-bit unsigned), 24 floats, 32 timers (32-bit), 16 counters. Additional non-retainable operands: 64 X-bits, 32 X-integers, 16 X-long integers, 16 X-double words (32-bits unsigned)		
HMI Panel			
Color Touchscreen	Resistive, Analog		
Cut Out Height x Width (mm)	92 X 92	122.5 X 91.5	193 X 125
Resolution	320 X 240 (QVGA)	480 X 272	800 x 480 (WVGA)
Keys	Displays virtual keyboard when the application requires data entry		
Environment			
Protection	NEMA4X/IP66/IP65 (when panel mounted)		
Operating Temperature	0 to 50°C		
Standards	UL, CE, EAC, UL Hazardous Locations, Class I, Division 2 ²		
General			
Battery	7 years typical at 25°C, battery back-up for RTC and system data, including variable data		
Clock	Real-time clock functions (date and time)		

Samba™ models - Built-in I/O configurations

¹ EX-RC1: via CANbus, integrate standard Unitronics I/O modules at distances of up to 1000m. Refer to website for more information.
² For a list of relevant models, contact Unitronics.

Article	Summary	Inputs ¹				Outputs				Operating Voltage
		Digital ²	HSC/Shaft-encoder ²	Analog	Temperature Measurement	Transistor ³	PWM/HZO ³	Relay	Analog	
SM35-J-R20 SM43-J-R20 SM70-J-R20	10 Digital, 2 D/A Inputs ⁴ , 8 Relay Outputs	12	1 30kHz, 32-bit	2 0-10V, 0-20mA, 4-20mA 10-bit	—	—	8	—	—	24VDC
SM35-J-T20 SM43-J-T20 SM70-J-T20	10 Digital, 2 D/A Inputs, 8 Transistor Outputs	12	3 30kHz, 32-bit	2 0-10V, 0-20mA, 4-20mA 10-bit	—	8 pnp	7 0.5kHz	—	—	24VDC
SM35-J-RA22 SM43-J-RA22 SM70-J-RA22	12 Digital, 1 HSC/Shaft-encoder, 2 AI, 2 PT100/TC, 8 Relay, 2 AO	12	1 30kHz, 32-bit	2 0-10V, 0-20mA, 4-20mA 12/14-bit	2 PT100/TC	—	8	—	2 0-10V, 4-20mA, 12-bit	24VDC
SM35-J-TA22 SM43-J-TA22 SM70-J-TA22	12 Digital, 1 HSC/Shaft-encoder, 2 AI, 2 PT100/TC, 8 Transistor, 2 AO	12	1 30kHz, 32-bit	2 0-10V, 0-20mA, 4-20mA 12/14-bit	2 PT100/TC	8 pnp	5 0.5kHz	—	0-10V, 4-20mA, 12-bit ²	24VDC

¹ In some models certain inputs are adaptable via wiring and software settings, and can function as digital or analog.
² Adapting requires input pins. This reduces the number of digital inputs.
 Pin requirements: Each analog input requires 1 pin.
 Example: SM35-J-R20 offers 12 digital inputs. Implementing 2 analog inputs requires 2 pins, leaving 10 pins free.

³ The total number of digital outputs listed includes high-speed and adaptable outputs.
⁴ The total number of digital outputs listed includes high-speed outputs.
⁵ When selecting NPN for the digital inputs, the 2 Analog inputs cannot be used.

I/O Expansion Modules & Accessories- Vision Series

Expand your system with local or remote I/O expansion modules.

	Expansion Modules Article	Inputs					Outputs				Operating Voltage
		Digital ¹	HSC ²	Analog	Temperature Measurement	Weight Measurement	Transistor ⁵	PWM/HSO ⁶	Relay	Analog	
Digital	IO-DI8-T08	8 pnp/npn	1 5kHz 16-bit	—	—	—	8 pnp	—	—	—	24VDC ⁹
	IO-DI8-R04	8 pnp/npn	1 5kHz 16-bit	—	—	—	—	4	—	24VDC ⁹	
	IO-DI8-R08	8 pnp/npn	1 5kHz 16-bit	—	—	—	—	8	—	24VDC ⁹	
	EX90-DI8-R08 ³	8 pnp	1 5kHz 16-bit	—	—	—	—	8	—	24VDC	
	IO-DI16	16 pnp/npn	1 5kHz 16-bit	—	—	—	—	—	—	24VDC ⁹	
	IO-T016	—	—	—	—	—	16 pnp	—	—	24VDC	
	IO-R08	—	—	—	—	—	—	8	—	24VDC ⁹	
	IO-R016	—	—	—	—	—	—	16	—	24VDC ⁹	
	IO-DI8ACH	8 AC	—	—	—	—	—	—	—	—	110/220 VAC
Analog, Temperature and Weight/Strain Measurements	IO-AI4-A02	—	—	4 0-10V, 0-20mA, 4-20mA 12-bit	—	—	—	—	2 ±10V 12-bit+sign, 0-20mA, 4-20mA 12-bit	24VDC	
	IO-PT400	—	—	—	4 PT100/NI100/NI120	—	—	—	—	Not relevant	
	IO-PT4K	—	—	—	4 PT1000/NI1000	—	—	—	—	Not relevant	
	IO-A06X	—	—	—	—	—	—	—	6 (Isolated) 0-10V, 0-20mA, 4-20mA 12-bit	24VDC	
	IO-LC1	1 pnp	—	—	—	1 Loadcell / Strain gauge	2 pnp	—	—	24VDC	
	IO-LC3	1 pnp	—	—	—	3 Loadcell / Strain gauge	2 pnp	—	—	24VDC	
	IO-ATC8	—	—	8 Thermocouple, 0-10V, 0-20mA, 4-20mA 14-bit	—	—	—	—	—	Not relevant	
	IO-AI8	—	—	8 0-10V, 0-20mA, 4-20mA 14-bit	—	—	—	—	—	Not relevant	
XL Digital/ Analog	IO-D16A3-R016	16 pnp/npn	2 30kHz 16/32-bit ⁸	3 0-20mA, 4-20mA 10-bit	—	—	—	16	—	24VDC	
	IO-D16A3-T016	16 pnp/npn	1 30kHz 16/32-bit ⁸	3 0-20mA, 4-20mA 10-bit	—	—	15 pnp, 1 npn/npn	1 pnp 0.5kHz npn 50kHz	None	24VDC	
	EX-D16A3-R08 ⁷	16 pnp/npn	2 30kHz 16/32-bit ⁸	3 0-20mA, 4-20mA 10-bit	—	—	None	None	8	24VDC	
	EX-D16A3-T016 ⁷	16 pnp/npn	1 30kHz 16/32-bit ⁸	3 0-20mA, 4-20mA 10-bit	—	—	15 pnp, 1 npn/npn	1 pnp 0.5kHz npn 50kHz	None	24VDC	
High-speed Remote I/O Module	EXF-RC15 ^{2,4,10}	9 pnp/npn	3 200kHz 32-bit	—	—	—	4 npn	4 (up to 3 PTO)	2	24VDC	

I/O Expansion Module Adapters

I/O Expansion Module Adapters	Article	Description
	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 ^{1,4}	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 supported I/Os & I/O modules varies according to module.
² The EXF-RC15 functions as a node in a Vision UniCAN network and connects to the Vision controller via CANbus and programmed in VisiLogic. The EXF-RC15 cannot be extended as regular I/O unit. High-speed inputs are configurable as either high-speed counter (HSC) or shaft-encoder.
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 Supported by Samba, Vision and UniStream series.
⁵ The total number of digital inputs listed includes high-speed inputs. Example: the IO-D16A3-T016 offers a total of 16 pnp/npn inputs. You can configure 14 as a HSC and 15 as a Counter reset; this reduces the available number of digital inputs to 14.
⁶ The total number of digital outputs listed includes high-speed outputs. Example: the IO-D16A3-T016 offers a total of 16 transistor outputs. You can configure 1 to High-speed output, reducing the number of available digital outputs to 15.
⁷ Functions as local adapter. Can support up to 7 I/O modules.
⁸ 16-bit or 32-bit, depending on the PLC.
⁹ Also available as 12VDC – contact us for part number.
¹⁰ One HSC may be configured as a shaft encoder.

Snap-in I/O Modules

Compatible with Vision models: V560, V570, V700, V1040 and V1210.

Snap-in I/O Article	Inputs				Outputs				Operating Voltage
	Digital (isolated) ¹	HSC/Shaft-encoder ¹	Analog	Temperature Measurement	Transistor (isolated) ²	PWM/HSO ²	Relay	Analog	
V200-18-E1B	16 pnp/npn	2 10kHz 32-bit	3 0-10 V, 0-20mA, 4-20mA 10-bit	—	4 pnp/npn	2 pnp 0.5kHz npn 50kHz	10	—	24VDC
V200-18-E2B	16 pnp/npn	2 10kHz 32-bit	2 0-10 V, 0-20mA, 4-20mA 10-bit	—	4 pnp/npn	2 pnp 0.5kHz npn 50kHz	10	2 0-10 V, 0-20mA, 4-20mA 12-bit	24VDC
V200-18-E3XB	18 pnp/npn	2 10kHz 32-bit	4 (Isolated) Thermocouple, PT100, 0-10V, 0-20mA, 4-20mA 14-bit	—	2 pnp/npn	2 pnp 0.5kHz npn 50kHz	15	4 (Isolated) 0-10 V, 4-20mA 12-bit	24VDC
V200-18-E4XB	18 pnp/npn	2 10kHz 32-bit	4 (Isolated) Thermocouple, PT100, 0-10V, 0-20mA, 4-20mA 14-bit	—	15 pnp, 2 npn/npn	2 pnp 0.5kHz npn 50kHz	—	4 (Isolated) 0-10 V, 4-20mA 12-bit	24VDC
V200-18-E5B	18 pnp/npn	2 10kHz 32-bit	3 0-10 V, 0-20mA, 4-20mA 10-bit	—	15 pnp, 2 npn/npn	2 pnp 0.5kHz npn 50kHz	—	—	24VDC
V200-18-E6B	18 pnp/npn	2 10kHz 32-bit	2 Thermocouple, PT100, 0-10V, 0-20mA, 4-20mA 14-bit 3 0-10V, 0-20mA, 4-20mA 10-bit	—	2 pnp/npn	2 pnp 0.5kHz npn 50kHz	15	2 (Isolated) 0-10 V, 4-20mA 12-bit	24VDC
V200-18-E46B	18 pnp/npn	2 10kHz 32-bit	6 0-10 V, 0-20mA, 4-20mA 14-bit 3 0-10 V, 0-20mA, 4-20mA 10-bit	—	2 pnp/npn	2 pnp 0.5kHz npn 100kHz	15	2 (Isolated) 0-10 V, 4-20mA 12-bit	24VDC
V200-18-E62B ³	30 pnp/npn	2 10kHz 32-bit	2 0-10 V, 0-20mA, 4-20mA 10-bit	—	28 pnp, 2 npn/npn	2 pnp 0.5kHz npn 100kHz	—	—	24VDC

¹ The total number of digital inputs listed includes high-speed inputs.
² The total number of digital outputs listed includes high-speed outputs.
³ Not yet UL certified

Vision & Samba COM Modules

Enhance Vision's communication capabilities

Model	Ethernet	RS232/RS485	Isolated RS232/RS485	CANbus	Profibus
SAMBA	V100-17-ET2	V100-17-RS4	V100-17-RS4X	V100-17-CAN	—
V130, V350, V430 ¹	V100-17-ET2, V100-S-ET2 ²	V100-17-RS4	V100-17-RS4X	V100-17-CAN, V100-S-CAN ⁵	V100-17-PB1
V560, V570, V1040, V1210 ²	V200-19-ET2	V200-19-RS4	V200-19-RS4-X	Built-in	—
V700 ⁴	Built-in	V100-17-RS4	V100-17-RS4X	V100-17-CAN	V100-17-PB1

¹ V130/V350/V430: Two ports may be added: 1 for Serial/Ethernet/Profibus and 1 for CANbus.
² V560/V570/V1040/V1210: 1 port may be added: Serial/Ethernet.
³ Extended temperature cards, operational temperature: -30°C to 60°C (-22°F to 140°F) - for V350-JS-TA24 only.
⁴ V700 is supplied with an Built-in Ethernet port. One port may be added: serial/Profibus, and CANbus.
⁵ Not yet UL certified

DIN-rail Power Supplies

UAP-24V24W	UAP-24V60W	UAP-24V96W
24W 24V 1A	60W 24V 2.5A	96W 24V 4A

GSM

GSM-KIT-17J-3G
KIT, MODEM GPRS, CINTERION, EHS6T

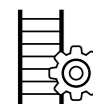
VisiLogic™ - Vision™ and Samba™ All-in-One programming software

A single, intuitive environment for all your application needs



Hardware Configuration

Intuitive set up: controller, I/Os, and COM channels



Ladder Programming

Rapidly drag & drop elements and Function Blocks



HMI Application

Create beautiful HMI displays – includes rich image library



Alarms: Built-in Screens

Effectively alert staff via Alarm screens



Languages - String Library

Instantly switch HMI language via screen touch



Data Tables

Create logs, import/export data, implement recipes



Trend Graphs

Display dynamic values in real-time



Web Server

Display and edit application values via browser

Software features vary according to controller model

Smart Utilities – Remote Access, Efficient Data Management, and more

Utility Name	Function	Key Features	Targeted Users
Remote Access 	View and control a PLC directly from PC, via local or remote connection	<ul style="list-style-type: none"> View an HMI panel: use the PC keyboard + mouse to run the HMI application Operand and Data Table values: view values during runtime, import and export values to/from Excel/.csv files 	<ul style="list-style-type: none"> Operators requiring Remote Access System integrators: remote debugging, troubleshooting, fault-finding
Remote Operator 	Simultaneously view and operate the HMI panels of multiple PLCs in multiple locations	<ul style="list-style-type: none"> Easily place HMI panels side-by-side to monitor distributed systems or applications in several locations Run the HMI applications via PC keyboard + mouse 	<ul style="list-style-type: none"> Control room operators Installation managers
DataXport 	Create Data Logs from Data Tables and operand values in PLCs	<ul style="list-style-type: none"> Harvest data from multiple PLCs on demand or according to time/date Export the data to ± Excel/.csv files Automatically email files 	<ul style="list-style-type: none"> Data analysts Plant managers Process engineers
UniDownload Designer 	Create compressed VisiLogic / U90Ladder applications(.udc files) for secure installation in local or remote PLCs	<ul style="list-style-type: none"> Prevent end-users from uploading and opening the application Include an OS to be installed at download Set a download channel, restrict end-user actions after installation and more 	OEMs / System Integrators can: <ul style="list-style-type: none"> Protect source code Enable customers to install an application without using VisiLogic or U90Ladder
Download Manager & UniDownloader 	Securely install .udc applications in local or remote PLCs	<ul style="list-style-type: none"> Download Manager: installs the same application in multiple PLCs UniDownloader: installs an application in a single PLC 	<ul style="list-style-type: none"> OEMs / System Integrators in installations with high security requirements
SD Card Suite 	Remotely access and manage SD cards and their data	<ul style="list-style-type: none"> Browse a remote PLC's SD card Read/write data, including Data Table files View SD card contents - Trends, logs, alarm history, data tables - export to Excel 	<ul style="list-style-type: none"> Data analysts Plant managers Process engineers
UniVision Licensing 	Safeguard your PLC application security	<ul style="list-style-type: none"> Embeds unique licenses in the PLC, which enables application to run only on a licensed PLC Option to activate or deactivate different sections of your application Prevents theft of applications 	<ul style="list-style-type: none"> System integrators OEMs
UniOPC Server 	Exchange data between Unitronics PLCs and OPC-supported software	<ul style="list-style-type: none"> Create channel to connect PLCs to SCADA systems, such as plant control rooms Compliant with the OPC foundation standards 	Control room operators
UniDDE 	Exchange data with Windows based applications	Enables data exchange between Unitronics PLCs and software that supports Microsoft's Dynamic Data Exchange protocols, like Excel	Control rooms operators
Programming tools for developers 	Easily implement communication between PLC & PC applications	Using ActiveX & .NET communication drivers	Developers