

Micro SoftPLC Controllers

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Overview

The Micro SoftPLC models MN1-A1-x include the functions/features of [all SoftPLC controllers](#), including:



- Deterministic, high speed program execution
- “Unlimited” user logic and data table memory
- Ladder logic and data table addressing similar to Allen-Bradley PLC-5/SLC-500
- Fully documented applications, all documentation resides in the controller
- Supports user functions written in C++
- Compatible with all HMI/SCADA products
- Industry standard protocols for communications and I/O (eg: *ModbusTCP/UDP, Ethernet/IP, Modbus RTU/ASCII, and others*)
- Embedded HMI and web server options

Hardware Features

- (1) GB Ethernet and (2) USB communication ports(s)
- 512MB RAM minimum
- 8GB on-board flash
- CPU - 64bit quad-core ARM Cortex
- Power by +5 VDC
- Size (HxWxD) - 57.5 x 30 x 55 mm, ~(2.24" x 1.18" x 2.16")
- DIN-rail mounting, metal enclosure
- option for removable MicroSD Flash
- option for internal WiFi or Bluetooth

Micro MN1 Models

A model MN1-A1-x Micro SoftPLC consists of a base CPU (Cat No MN1-A1) with a selected Runtime License size (-x). You can also select factory installed firmware & hardware options, ordered separately by Catalog Number.

Each unit is assembled and configured with your selected options, then undergoes a system-level test prior to shipment.

Runtime License Size Options

There are (4) available SoftPLC firmware runtime sizes, where runtime size determines the maximum supported number of Ethernet/IP connection bytes, ModbusTCP servers, and digital I/O points (*analog I/O is limited only by hardware, not firmware*).

The table below summarizes these choices. Details on these limits are in the communication driver manuals for each protocol.

Specify the size by appending the suffix to the base model Catalog Number. For example, a 1K license would be model SN2-A1-1K.

Cat No Suffix	ModbusTCP Servers	Ethernet/IP Bytes	Discrete Inputs [^]	Discrete Outputs [^]
LT	2	64	128	128
1K	16	512	1024	1024
2K	32	1024	2048	2048
8K	127	4096	8192	8192

[^]Select the size based on the larger value in either category. For example, a system with 130 inputs and 24 outputs would require a 1K version.

Other Factory Installed Options

Order the following as separate line item(s) by Catalog Number. SoftPLC Corp. will manufacture the unit to include these options.



Hardware Options		
SPO-WIFIMOD	Wifi Antenna Extension & Case Modification	enables use of WiFi 802.11 b/g/h
SPO-EXTEMP	Extended Temperature Option	extends operating range to -20~70°C
Software Options		
SPZ-WEB	SoftPLC Embedded Web Server	
SPZ-EML	Send Email/Text Message Package	adds ability to send Email messages

MLX Micro Models

Also available in the MLX Micro SoftPLC family are the MLXP3xx-MN1-A1 models. These consist of a MN1-A1 CPU and an MLXP3xx I/O block. This combination is a compact controller system, suitable for many small applications and specifically targeted as an option to an Rockwell Automation MicroLogix. [Detailed MLXP3xx Specifications.](#)

Accessories

The items below are popular optional hardware accessories for use with the Micro SoftPLC.

Catalog Number	Description	Image
ICO-PSH1505	DIN-rail P/S, Output 5VDC, 15W; Input: 100~240VAC	 A black DIN-rail power supply unit with two silver mounting tabs on the sides. It has a small label on the front with technical specifications.
ICO-PSH3005	DIN-rail mount P/S, 5VDC output, 30 Watts, 85-264VAC input	 A black DIN-rail power supply unit, similar in design to the ICO-PSH1505 but larger. It has two silver mounting tabs and a label on the front.
SPO-USBSERKIT	SoftPLC USB to serial support kit (cable/firmware)	

I/O and System Configurations

MN1-A1 SoftPLC's can be used with a wide variety of I/O and other devices.



The MLXP3xx-MN1-A1 models include a MN1-A1 SoftPLC CPU and an MLXP3xx I/O block. This combination is a compact micro controller system, suitable for many small applications and specifically targeted as an option to an Rockwell Automation MicroLogix.

Additionally, any Ethernet, serial, or USB remote I/O can be used using the built-in Ethernet and USB ports, providing a SoftPLC driver exists. Many drivers exist, and new drivers can be developed using the SoftPLC Programmer's Toolkit. Multiple I/O drivers can be used with a single controller.

MLXP3xx I/O Options

The MLXP3xx I/O can be used with any SoftPLC CPU, connected via Ethernet using ModbusTCP.

[Detailed MLXP3xx Specifications.](#)

Catalog Number	Description	Image
MLXP300	(16) digital inputs + (16) digital outputs	
MLXP325	(16) digital inputs + (16) digital outputs + (5) analog inputs + (2) RTD inputs + (4) analog outputs	

Serial/USB Examples

Models MN1-A1 support RS-232 or RS-485 serial I/O via the USB ports, in conjunction with a SoftPLC Serial Support Kit (Catalog Number SPO-USBSERKIT). This kit includes USB to serial cabling and firmware configuration.

- Modbus - any compatible devices - I/O, meters, drives, or other process equipment
- [COMGENIUS](#) supports ASCII string type protocols
- Other serial I/O drivers (eg: [A-series](#))
- Write your own serial interface with the SoftPLC Programmer's Toolkit

Ethernet Examples

- ModbusTCP/UDP to compatible I/O systems and devices (*including Tealware*) on up to 127 remote slaves
- Ethernet/IP™

- Write your own ethernet interface with the SoftPLC Programmer's Toolkit

Resources

Data Sheets

[MLX SoftPLC Data Sheet](#)

[MLX SoftPLC Detailed Specifications](#)

Manuals

[MLX SoftPLC Quick Start Guide](#)

[SoftPLC & TOPDOC NexGen User Guide](#)

Videos

[MLX PLC - MicroLogix Alternative \(~6 min video\)](#) [Watch on YouTube](#)

[A-B Control System Migrations \(~16 min video\)](#) [Download](#) or [Watch on YouTube](#)

[What is a SoftPLC? An overview of SoftPLC® Controllers](#) [Download](#) or [Watch on YouTube](#).

[Allen-Bradley PLC Upgrades \(~5 min video\)](#) [Download](#) or [Watch on YouTube](#)

[A-B Migrations \(~13 min Podcast\)](#) [Listen](#)