Micro SoftPLC Controllers

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Overview

The Micro SoftPLC models MNS1-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 web server option

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 internal WiFi or Bluetooth

Micro MNS1 Models

A model MNS1-x Micro SoftPLC consists of a base CPU (Cat No MNS1) 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 MNS1-1K.

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-MNS1 models.

These consist of a MNS1 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	
ICO-PSH3005	DIN-rail mount P/S, 5VDC output, 30 Watts, 85-264VAC input	
SPO-USB232KIT	SoftPLC USB to RS-232 serial support kit (cable/firmware)	
SPO-USB485KIT	SoftPLC USB to RS-485 serial support kit (cable/firmware)	
SPO-UCONCBL	Serial Console Access Cable, USB 2.0 to Micro-USB, 10') Used for troubleshooting in the event the Ethernet port is not accessible	

I/O and System Configurations

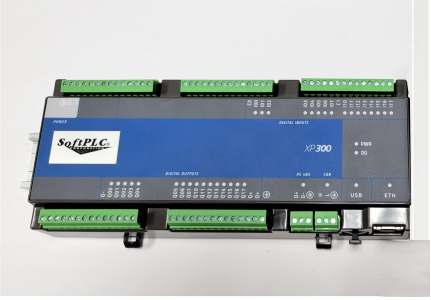
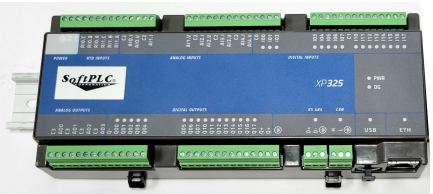
MNS1 Micro SoftPLC's can be used with a wide variety of I/O and other devices.

The MLXP3xx-MNS1 models include an MNS1 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 MNS1 support RS-232 or RS-485 serial I/O via the USB ports, in conjunction with a SoftPLC Serial Support Kit (Catalog Number SPO-USB232KIT or SPO-USB485KIT). Thess kits include a USB to serial converter cable and supporting 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