

Smart SoftPLC®

General Description

Smart SoftPLC® is an open architecture Programmable Automation Controller (PAC) that provides scalable solutions for a wide range of applications in any industry. Priced to meet the needs of small I/O machine control applications, yet with enough capacity and capability for large process control applications, it's the SMART choice!

The Smart SoftPLC includes all the functions/features of SoftPLC embedded runtime control software 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++
- ◆ Embedded firewall option with VPN capability for advanced network security
- ◆ Compatible with all HMI/SCADA products
- ◆ Embedded web server option

Smart SoftPLC is programmed and maintained with TOPDOC® NexGen via Ethernet. TOPDOC NexGen is available for the Windows and Linux operating systems.

Communications

SMART provides a rich set of ports for communication:

- ◆ (5) GB Ethernet ports with (2) interfaces for routing capability
- ◆ (2) USB 2.0 Host ports
- ◆ (1) RS-485 serial port
- ◆ (3) factory customizable ports (RS-485, A-B RIO, A-B DH+)

Industry standard protocols such as ModbusTCP/UDP, Ethernet/IP, A-B Ethernet, DF1, Modbus RTU/ASCII, and others are supported.

I/O & System Configurations

The base Smart SoftPLC can be combined with different "daughter cards" for ultimate flexibility and expandability, tailoring the system to the application requirements, thus lowering cost and complexity.



Smart SoftPLC w/ Backplane3 Interface (without and with modules installed)



Smart SoftPLC w/ LocalPorts Interface



Smart SoftPLC w/ no local I/O interface + optional bracket

Local I/O

SoftPLC Corporation's Tealware™ I/O is the local I/O interface for SMART. Tealware is a modular system which allows for maximum configurability. A variety of discrete, analog and specialty modules are available in this robust and proven I/O system.

For small I/O count systems, a "Backplane3" interface supports up to three (3) Tealware modules. The modules mount directly on top of the SMART CPU, making a very compact, yet flexible package.

For larger systems, a "LocalPorts" interface provides the ability to connect up to twelve (12) Tealware racks. Each rack can support up to 256 digital I/O (8 modules x 32 points/module), for a maximum capacity of $12 \times 256 = 3,072$ I/O points per CPU. The racks can reside up to 30 feet from the CPU.

Even with the largest systems, SMART is extremely fast. With Tealware I/O, the I/O scan is under 1 msec, even with a fully loaded system of 3072 points.

Remote and Distributed I/O

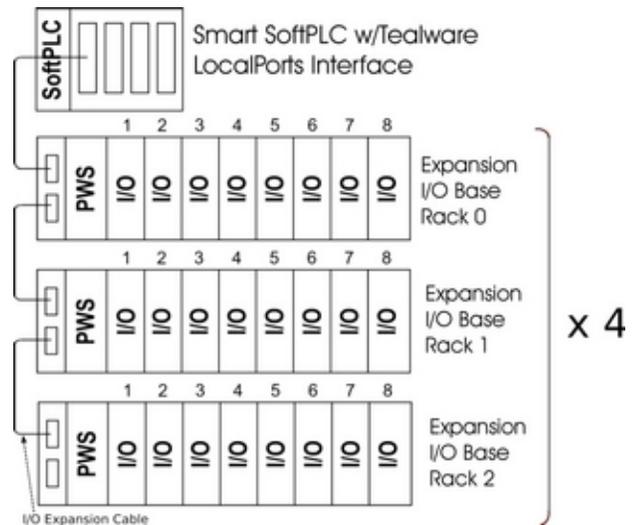
The Smart SoftPLC can interface to a variety of other vendor I/O systems through the included ethernet and serial ports (eg: Modbus, ModbusTCP, Ethernet/I, & others).

A Smart base unit can also be configured as a Remote Tealware Ethernet I/O Adapter. This allows for higher I/O counts and distributed I/O configurations.

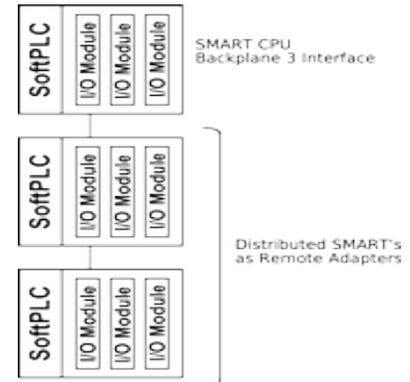


SPECIFICATIONS

Processor	64bit. quad-core ARM processor	
User Memory	512MB RAM, 8GB on-board eMMC flash	
Removable Memory	MicroSD (<i>optional, no card included</i>)	
Operating Temperature	0 to 60°C (storage -20 to 85°C) Extended Temperature option: -20 to 70°C	
Humidity	0-95%. non-condensing	
Input Voltage Range	6~72 VDC, terminal block connector	
Power Requirements	2-5W based on options selected	
Communication Ports	<p>(1) 4-port GB Ethernet switch (<i>w/ 2 unique host interfaces/MAC ID's</i>), plus</p> <p>(1) GB Ethernet port</p> <p>(1) RS-485 port, 2-wire, non-isolated</p> <p>(2) USB 2.0 host ports</p> <p>(1) Micro-SD serial console port (<i>for troubleshooting – requires optional SPO-UCONCBL cable</i>)</p> <p>(3) Option Ports, any mix of choices below (<i>must be factory installed</i>):</p> <ul style="list-style-type: none"> • RS-485, 2-wire, isolated • A-B RIO Master or Slave • A-B Data Hwy Plus • Others - <i>contact SoftPLC Corp.</i> 	
Wireless	WiFi	802.11 b/g/h (<i>requires optional SPO-WIFIMOD</i>)
	Cellular	Option (<i>SM4-MDM1 internal modem</i>)
Dimensions (HxWxD)	<p>5.75 x 6 x 1.5 in without modules (146.1 x 152.4 x 38.1 mm)</p> <p>5.75 x 6 x 5.625 in. with Tealware modules (146.1 x 152.4 x 142.88 mm)</p>	
Packaging	Fanless/Diskless system, Metal enclosure DIN-rail Mount, optional Panel Mount Bracket (<i>SM-VBKT</i>)	
I/O Interfaces (only one/system)	Backplane3 - 3 Tealware™ modules LocalPorts - 4 connectors, each supports up to 3 Tealware racks	
Remote I/O	Serial and Ethernet connections	
Real Time Update	Via internet or local LAN NTP server	
Security	Embedded Gatecraft™ Firewall/VPN SSH server for encrypted data transfer	
Status LED's	(2) System, (10) Ethernet, (4) Communication port, (1) cell modem	



Configuration Example - Smart SoftPLC w/ LocalPorts I/O Interface



Smart SoftPLC w/ Ethernet I/O using remote Smart's in Adapter mode

Ordering Information: Order Smart SoftPLC using Cat No SMS4-x-y, where x is the interface option from the table below and y is the License size from the table at the bottom of this page:

B	Backplane3
L	LocalPorts
<none>	Blank Cover

Runtime License Sizes				
Cat # Suffix	ModbusTCP Servers	Ethernet/IP Connection Bytes	Discrete Inputs*	Discrete Outputs*
LT	2	64	128	128
1K	16	512	up to 1024	up to 1024
2K	32	1024	up to 2048	up to 2048
8K	127	2048	up to 8192	up to 8192

* Applies to Allen-Bradley and Smart input/output image table support and force table size only