

# SMART™ SoftPLC

## General Description

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

SMART includes all the functions/features of SoftPLC 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 with VPN capability for advanced network security
- ◆ Compatible with all HMI/SCADA products
- ◆ Embedded web server option

SMART 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:

- ◆ (4) 10/100MB copper Ethernet ports
- ◆ (1) 10/100MB Fiber Optic Ethernet port (option)
- ◆ (5) RS-232 serial ports
- ◆ (1) phone modem or RS-485 port (option)

Industry standard protocols such as ModbusTCP/UDP, 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.



## 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 wide variety of discrete, analog and specialty modules are available in this robust and proven I/O system.

For small systems, a daughter card for three (3) Tealware modules is available. The modules mount directly on top of the SMART CPU, making a very compact, yet flexible package.

For larger systems, a daughter card with connections to up to twelve (12) Tealware racks is available. 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 15 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

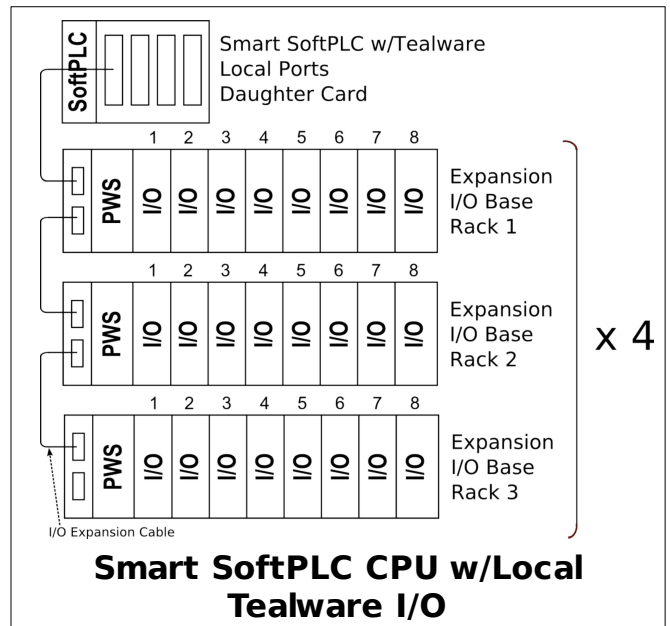
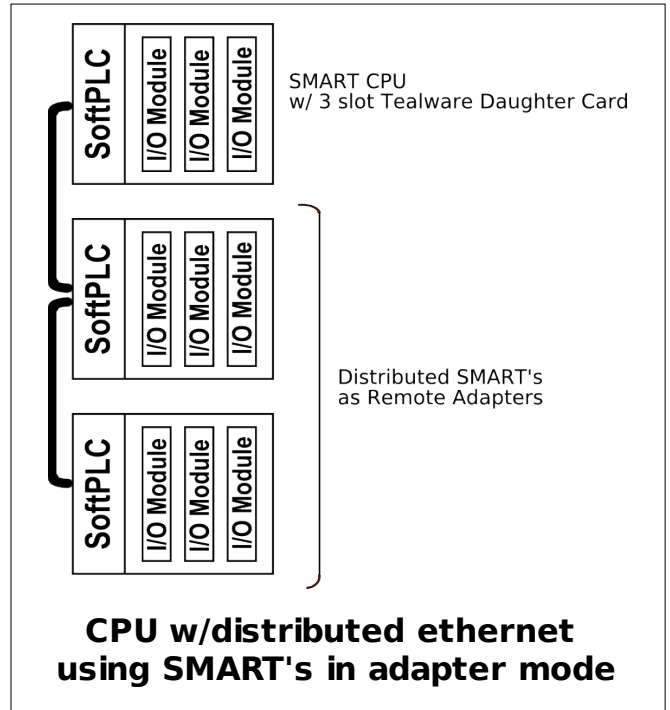
SMART can interface to a variety of other vendor I/O systems through the included ethernet and serial ports, or with add-on PCI-104 interface cards such as DeviceNet, Profibus, SERCOS, and others.

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

<b>Processor</b>	166 MHz ARM9 CPU, 32-bit	
<b>User Memory</b>	63 MB RAM	
<b>Removable Memory</b>	128 MB Compact Flash, expandable to 8 GB, SD Flash	
<b>Operating Temperature</b>	0 to 70°C	
<b>Storage Temperature</b>	-20 to 85°C	
<b>Humidity</b>	0-95%, non-condensing	
<b>Input Voltage Range</b>	12 ~ 48 VDC or Power Over Ethernet (POE)	
<b>Power Requirements</b>	5 W	
<b>Real Time Clock</b>	Battery Free, SuperCap backup good for ~60 days	
<b>Communication Ports</b>	(5) RS-232 ports, (1 w/ handshake lines) (4) 10/100BaseT Ethernet ports (w/ 2 unique host interfaces-MAC ID's) (1) Multi/Single-Mode Fiber port ( <i>optional</i> ) (1) RS-485 port ( <i>optional</i> ) (1) phone modem port ( <i>optional</i> )	
<b>Protocols</b>	<b>Serial</b>	Modbus Master/Slave, DF1, ASCII
	<b>Ethernet</b>	ModbusTCP/UDP, DF1 Ethernet
<b>Dimensions (HxWxD)</b>	5.75 x 6 x 1.5 in without modules (146.1 x 152.4 x 38.1 mm) 5.75 x 6 x 5.625 in. with modules (146.1 x 152.4 x 142.88 mm)	
<b>Packaging</b>	Fanless/Diskless system, DIN-rail Mount, Metal enclosure	
<b>Local I/O Interfaces (only one/system)</b>	(3) Tealware™ modules Tealware rack bus (4 connectors, each supports up to 3 racks)	
<b>Remote I/O Interfaces</b>	PCI-104 slot for add-in cards Serial and Ethernet connections	
<b>GPS Interface</b>	Embedded NTP Server	
<b>Security</b>	Embedded Gatecraft™ Firewall/VPN SSH server for encrypted data transfer	



Daughter Card Options
Tealware 3 Slot
Tealware Local Ports

Communication Options
RS-485
Phone Modem
Fiber - Single or Multi Mode, user selectable cable connections

Runtime License Sizes		
I/O Capacity	Discrete Inputs	Discrete Outputs
LT	128	128
1K	up to 1024	up to 1024
2K	up to 2048	up to 2048
8K	up to 8192	up to 8192