

## SDC-30 Programmable Sedona Distributed Controller

The SDC-30 (Sedona Distributed Controllers) controllers are robust, networkable, programmable controllers with high performance, multi-protocol support for large range of specific and generic applications. The controllers support BACnet IP, BACnet Ethernet, BACnet MS/TP, Modbus TCP/IP, Modbus RTU over Serial (RS-485) and Sedona SOX protocols. The controllers are fully programmable using either standard Sedona Workbench or Niagara AX Workbench.

### Features

- Fully Programmable Controller using Industry's First Open Framework; Sedona Framework
- 30 Built-In High Accuracy Inputs and Outputs; High Accuracy 14-Bit A/D Converter
- Multi Protocol Support; BACnet and Modbus over TCP/IP or Serial
- LED Indication for Input and Output Status
- DIN-Rail or Wall Mounting
- Supports Full Programming via "Wire Sheet" - Graphical Object Programming. Dynamic Memory Management for Optimised Performance.
- Remote Online Firmware Upgrades and Configuration
- Built-In Web-Browser Interface for Configuration Settings
- Seamless connection to SDC-TS35 colour Touchscreen User Interface



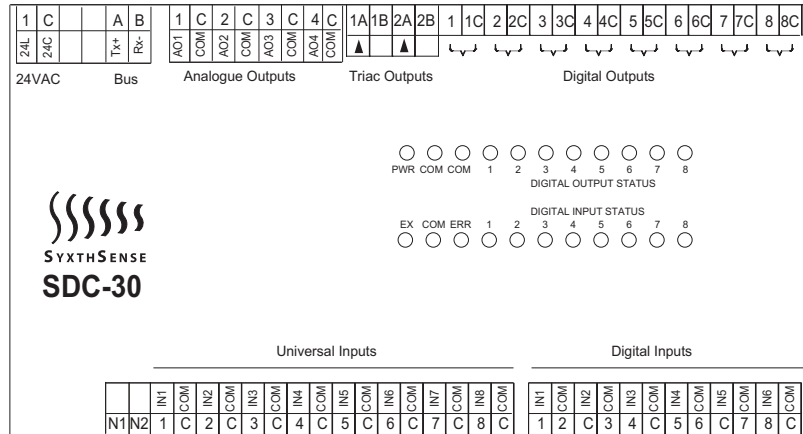
POWERED BY  
**SEDONA**  
FRAMEWORK™

Model Type	Model	Description
	<b>SDC-30</b>	Programmable Sedona Framework™ Controller, 30 Inputs/Outputs
	<b>SED-WB-OS</b>	Sedona Workbench License
<b>Technical Data</b>	Power Supply	24 VAC 3.6VA Max 20..34VDC
	Power Consumption	150mA max @ 24VDC
	Universal Inputs	8 x Universal Measurement Inputs - Voltage 0..10V (+/-0.005V), 0..5V(+/-0.003V) - Current: 4..20mA (+/-0.01mA), 0..20mA (+/-0.01mA) - Resistance: 0..30kOhm (+/-10 Ohm), 0..10kOhm (+/-5 Ohm), 0..1.5kOhm (+/-1 Ohm) - Thermistor: NTC10K, Platinum 1000 (+/-0.01°C)
	Digital Inputs	8 x Volt-Free Inputs; Max 5V at 500 Ohm Resistance
	Analogue Outputs	4 x Analogue Outputs - 0..10Vdc; 0..20mA, 4..20mA (up to 800 Ohm load)
	Relay Outputs	8 x Relays, 48V at 24VAC, SPST NO, Pilot Duty
	Digital Outputs	2 x Triacs, max 1A 60V (Open Collector Output, Isolation 3.75kV)
	Communication Port 1	- EIA-485 Two-Wire (BUS A and B RS485) Half Duplex - Data Speed: 9.6K,19.2K,38.4K,115.2K bit/s; 8 Data Bits, Parity None/Odd/Even - Application Protocol: Modbus RTU Serial, BACnet MS/TP
	Communication Port 2	- Ethernet 10/100 Base-T - Ethernet Support: IP, TCP, UDP, ICMP, IGMP,FTP,HTTP - Application Protocol: BACnet IP, BACnet Ethernet, Modbus TCP and Sedona SOX
	Operating Temp	0..65°C, max 95%rh non-condensing
	Storage Temp	-20..+65°C
Operating Humidity	10..95% rH non-condensing	

Enclosure	IP20, UL94 ABS
CE Approval	EN61000-6-3: 2001 (Emissions) EN61000-6-2: 2001 (Immunity)
Mounting	DIN-rail mounting
Terminals	High quality spring-cage terminal blocks
Dimensions	W187 x H110 x D47mm
Weight	400g

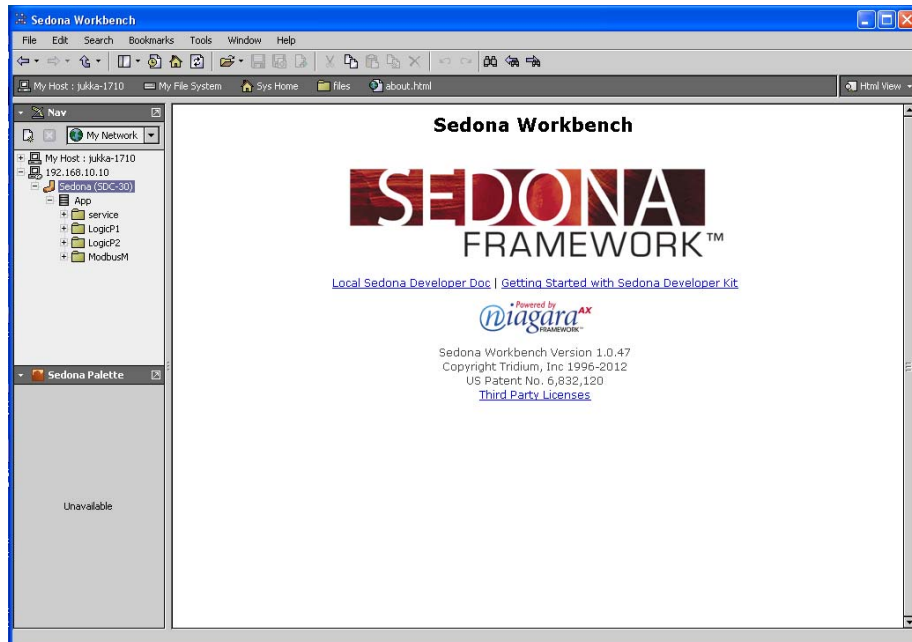
**SDC-30 Controller Wiring Diagram**

Please consult the below diagram for the wiring details.



**The SDC-30 Graphical Programming (Using Sedona Workbench or Niagara AX Workbench)**

The SDC controllers are programmed using Sedona or Niagara AX Workbench (including CoachAX). The Sedona Framework™ allows free programming of the controllers, and the SDC controllers come with extensive range of application object libraries (kits) as standard.

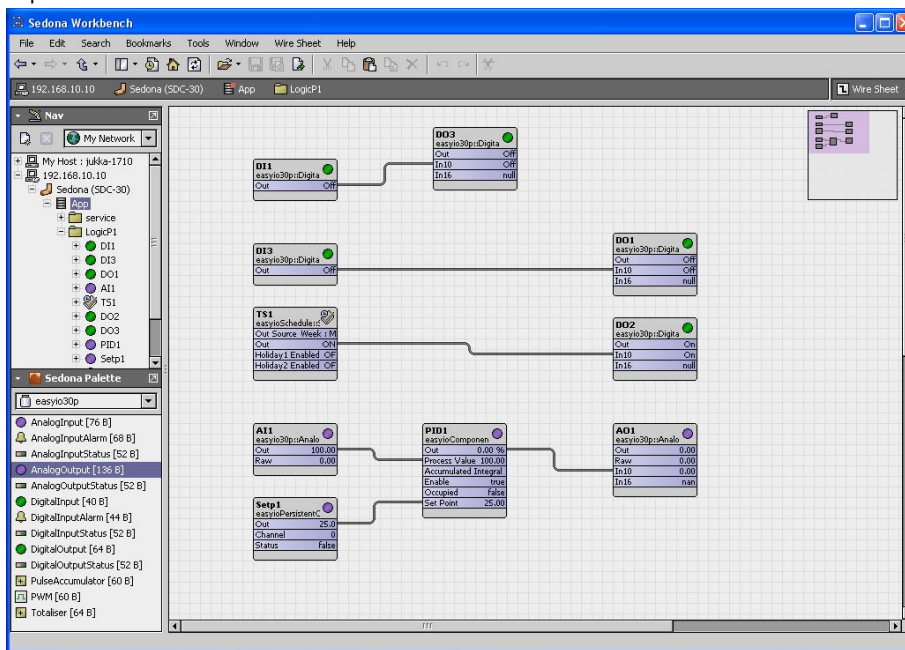


The Sedona or Niagara AX Workbenches allow graphical programming of the controllers. The image below illustrates how the controller programs are created linking graphical objects together. The standard SDC controller libraries (kits) include all typical objects required for configuring the controllers to HVAC applications. The type of objects include:-

- Analogue/Digital Input and Analogue/Digital Output Objects
- Single and Multi-Stage PID Loop Control Objects
- Time and Holiday Schedule Objects
- Optimiser and Psychometric Chart Objects
- Logical Programming Objects (e.g. AND, OR, XOR, NOT)
- Analogue Programming Objects (e.g. Latches, Limiters, Sequencers)
- Min/Max, Counter and Timer Objects
- Historical Trend Data Objects

- Email Transmission Objects
- Objects to Support Most Common Sensor Types (NTC10k4, Satchwell (10K Linearised), Land-ing and Staefa/Siemens Ni1000, Honeywell NTC20K and PT1000)
- NTP (Internet) Time Update Objects
- Modbus Slave Configuration Objects
- Modbus Master Configuration Objects
- BACnet Objects
- SDC-TS35 Touchscreen Display Configuration Objects
- Mathematical objects (e.d. ArcCosine, ArcSine, Log, Log10, Power, Sine, Cosine)
- TCom Object Library Allowing Seamless Integration to JACE and HAWK and other Niagara Framework™ based products

The object libraries are constantly enhanced and the flexible structure of Sedona Framework™ allows the controller objects libraries to be upgraded even after the installation should this be required.



**Network Architecture Examples**

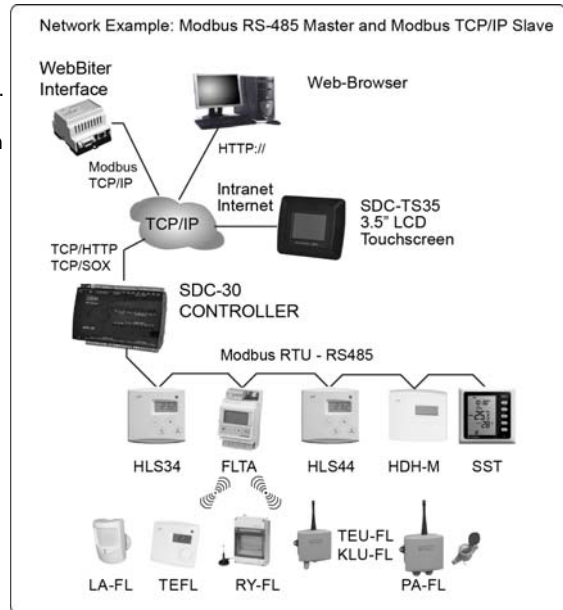
The SDC controllers can operate as

- Modbus Slaves (over TCP/IP or RS-485)
- Modbus Master over RS485
- BACnet Server (over TCP/IP)

In addition SDC controller TCOM driver allows seamless integration to JACE, HAWK and other Niagara Framework based devices. TCOM driver exposes all controller points to the master devices without any complex configuration.

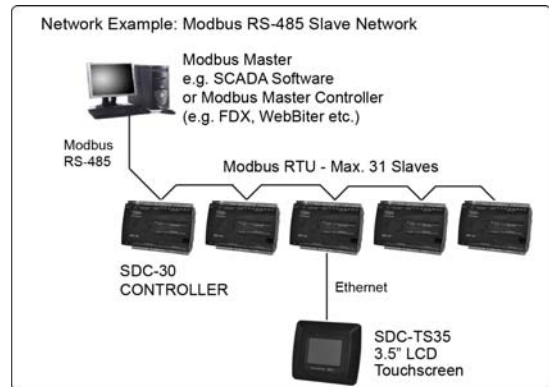
Network Example 1: Modbus TCP/IP Slave and Modbus Master

The SDC controller can simultaneously act as a Modbus TCP/IP Slave and a Modbus RS-485 Master. The diagram below illustrates the network architecture. The SDC-30 controller can currently support up to 8 Modbus Slave devices in the master mode.



Network Example 2: Modbus RS-485 Slave

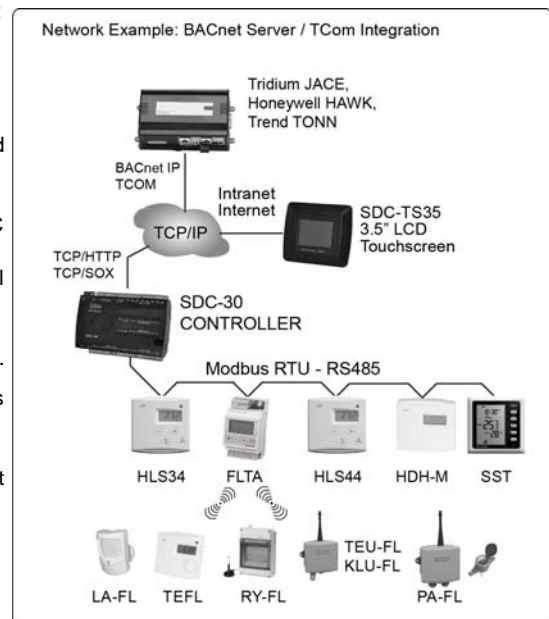
The SDC controller can operate as a Modbus RS-485 slave. In this configuration up to 31 SDC controllers can be connected to a Modbus Master device..



Network Example 3: BACnet/Tcom Server

The SDC controller can act as a BACnet server. This allows easy connection to BACnet enabled BMS systems. The Tcom driver allows seamless integration to Niagara Framework based products e.g. Tridium JACE, Honeywell HAWK and Trend TONN. With the Tcom driver all controller points are exposed to NiagaraAX Workbench allowing the SDC controller to form an integral part of the system. Tcom driver allows also historical data and schedule objects to be integrated to Niagara platform instead of using the standard BACnet mechanisms.

As the SDC controller can still also act as a RS-485 Modbus master, the SDC controller can in addition to the control, be used as a compact Modbus to BACnet gateway.



Notes: JACE, Sedona Framework and Niagara Framework are Trademarks of the Tridium Inc. In the view of a constant development of their products, the manufacturer reserves the right for changing technical data and features without prior notice. The consumer is guaranteed against any lack of conformity for 24 months from the time of delivery, according to the European Directive 1999/44/EC. The full text of guarantee is available on request from the seller.