

Low power, high performance communications

Foxboro SCD2100 RTU



Product at a glance

The SCD2100 is a compact Class 1, Div. 2 certified, very low power RTU that brings IP connectivity, wireless, advanced I/O capabilities and open programming to remote, measurement and control applications. It is designed to remove the complexity from all applications and provide rapid start-up, ease in configuration and programming, plus highly flexible, IP-enabled communications in a single, integrated package.

Compact and reconfigurable

The Foxboro® SCD2100 RTU is part of Schneider Electric's Station Computing Device (SCD) family. It features a powerful 32-bit processor, large memory model and the FoxRTU Station open software configuration environment. The FoxRTU Station embeds ISaGRAF that is compliant with IEC 61131-3 and 61499 — the distributed processing and interoperability extension to 61131-3.

A broad offering of communications protocols ensures compatibility with most systems and includes Modbus master/slave (ASCII, RTU and TCP), SNMP, DNP3 slave and a user-defined option.

Low power, high performance communications

Foxboro SCD2100 RTU

Unlike competitive “brick” RTU products, the SCD2100 features configurable communications, I/O, and power supply modules that allow flexible configuration and provide the opportunity to upgrade the user’s investment.

The SCD2100 RTU includes:

Award-winning, compact package

Extremely small footprint and rugged enclosure that instrument cabinets can easily accommodate.

32-Bit Processor and Memory System

Running at 166 MHz, the ARM9 processor provides high performance. With a memory model that includes 32 megabytes of SDRAM, 16 megabytes of flash memory and ensures plenty of storage space for alarms, events, live data, historical reports and additional files.

Color OLED Display

Color organic light-emitting diode (OLED) screen displays important system parameters and status information such as address, date/time, power, and I/O status in real time with high contrast, 16-bit color.

10/100 Ethernet Port

The integral, 10/100 Ethernet interface provides IP networking and functions as a high-speed programming port.

USB2.0 Host Port

An onboard USB2.0 host port is included for use with industrial USB devices and USB-to-serial converters.



Serial/Wireless Expansion Port

The SCD2100 RTU has a built-in expansion port that provides flexible communications options.

Power Supplies

The SCD2100 power supply modules provide intelligent conditioning and filtering as well as integral, temperature compensated battery charging. Users can select either an AC or DC module:

- ACR 90~260 VAC, 96~340 VDC regulated
- DCU 10~30 VDC unregulated

Input Output Cards

The SCD2100 intelligent I/O cards are designed for applications that require high accuracy and performance. Advanced capabilities include input counting up to 10 KHz, quadrature counting (by pairing digital inputs), sequence-of-events (SOE) monitoring on a 1 ms interval, with configurable, fail-safe output settings. To meet a broad range of applications, users can select one of three I/O models:

MX2

- 14 Digital Inputs
- 8 Digital Outputs
- 6 Analog Inputs

Low power, high performance communications

Foxboro SCD2100 RTU

MX3

- 14 Digital Inputs
- 8 Digital Outputs
- 6 Analog Inputs
- 2 Analog Outputs

MX4

- 16 Digital Inputs
- 16 Digital Outputs



Users can quickly become familiar with the Outlook-style displays FoxRTU Station provides for advanced configuration and diagnostics.

Fox RTU Station software

The FoxRTU Station integrated operating environment combines configuration, program development and maintenance in one simple-to-use package. Systems integrators and end users can view, edit, and diagnose an SCD2100 solution with a highly intuitive, Microsoft Outlook®-style user interface.

FoxRTU Station eliminates the need to open — and switch between — multiple software packages, or engage in complicated programming. The software embeds the ISaGRAF IEC 61131-compliant environment, supports all five offered languages and is the first IEC 61499-compliant configuration environment intended for RTU products. Furthermore, the FoxRTU Station offers a library of pre-programmed function blocks that include operations such as AGA flow calculations, simplifies application development, and easily allows users to add new capabilities to a SCD2100 RTU solution.

Applications

The SCD2100 RTU brings IP connectivity, advanced I/O capabilities, and open programming, all in a compact platform, to small applications in traditional end-use industries. Customers in the broadcast/telecom, oil and gas, power, transportation, and water/wastewater industries will find the SCD2100 RTU cost-effective for installations that require low power and are located in hazardous environments (Class 1, Div. 2).



Low power, high performance communications

Foxboro SCD2100 RTU

SCD2100 specifications

Designation	Industrial grade remote terminal unit (RTU)
Processor	Cirrus ARM9 EP9301, 166 MHz maximum (internal)
Clock	Real-time clock with super capacitor back up
Memory	Flash 16 Mbytes/SDRAM 32 Mbytes/SRAM 32 Kbytes
Communication port 1	Ethernet (10/100BaseT)
Port 2	USB 2.0 host, full speed 12 Mbps max
Port 3	Option card (isolated serial, spread spectrum or PSTN modem)
Ethernet protocols supported	TCP/IP, UDP, TCP, ARP and ICMP TCP/UDP
OLED display	Color 96 x 64 pixel OLED (organic light emitting diode). Displays 8 lines of 19 characters
Auxiliary output	24 VDC @ 250 mA (6 W) Isolated (for powering I/O). Protected against continuous short circuit. Isolated to 1500 V (for up to 60 seconds). Maximum capacitive load 100 μ F
I/O connector	40-pin IDC male
Accessories	1, 2 or 5 meter interface cable, 40-pin IDC female to female Terminal interface block (DIN rail mountable)
Programming	Via FoxRTU Station IEC 61131-3, implemented using ISaGRAF Version 5.13
Input voltage range	ACR 90-260 VAC, 96-340 VDC — 35 W total DCU 10-30 VDC. 2.5 A @ supply voltage
Power consumption	G3: 2.5 W maximum I/O — Card MX2: 3 W/9 W maximum with auxiliary output OFF/ON respectively I/O — Card MX3: 4 W/10 W maximum with auxiliary output OFF/ON respectively I/O — Card MX4: 2 W/8 W maximum with auxiliary output OFF/ON
Port Isolation	Ethernet port: 150 VAC max (dielectric withstanding voltage 1000 VAC, RMS)
I/O Isolation	500 V RMS channel to logic 100 V RMS channel to channel between input groups 250 V RMS channel to other types of IO channels 250 V RMS channel to other types of IO channels
Dimensions	Height: 143 mm (5.6 in), 178 mm (7.0 in) including mounting lugs Width: 70 mm (2.8 in) Depth: 129 mm (5.1 in)
Digital inputs	
Rated input voltage	12 to 24 VDC (supports reverse polarity)
Input type	Current sinking
Input characteristics	Impedance: 4.7 k Ω _ On-state voltage: + 9.0 to 30 VDC Off-state voltage: + 0 to 5.0 VDC On-state current: 1.4 mA minimum. Current = (Vin-1.2)/5.7 mA Off-state Current: 0.5 mA maximum
Input scan time	1 ms (for all channels)
Debounce	0 (default) to 16000 ms configurable on any channel(s)
Channel inversion	Yes, selectable on any channel(s)

Low power, high performance communications

Foxboro SCD2100 RTU

SCD2100 specifications (continued)

Sequence of events	Yes, selectable on any channel(s)
Edge counting	Yes, selectable on any channel(s). Rising or falling edge
Frequency counting	10 kHz maximum on channels 1 and 2. 500 Hz maximum on all other channels
Quadrature counting	Selectable by pairing input channels (such as 1&2 and 3&4)
Digital outputs	
Rated switched voltage	12 to 24 VDC
Output type	Transistor, open collector and current sinking
Maximum switched voltage	60 VDC
Maximum switched current	100 mA per channel, self-limited
Output protection	Yes, reverse polarity, transient over-voltage and current
Output update time	1 ms (for all channels)
Failsafe	Yes, software configurable on any channel
Pulse/frequency generation	High speed: 10 kHz maximum, 1 Hz minimum @ 50% Nominal duty cycle. Configurable on channels 1 to 4 Accurate to 0.01% Low speed: 500 Hz maximum @ 50% nominal duty cycle. Configurable on channels 5 and higher. Accurate to 2% @ 500 Hz, 0.5% @ 100 Hz, 0.1% @ 1 Hz Configurable pulse ON or OFF time: 1 to 16,000 ms
Analog inputs	
Input ranges	4-20 mA, 0-20 mA, 1-5 V, 0-5 V (software selectable for each channel)
Input scan time	1 ms (for all channels)
Input impedance	250Ω — for current input. 1 MΩ — for voltage input
Accuracy	±0.05% @ 20° C/±0.15% @ -40 to 70° C
Resolution	16 bit
Analog outputs	
Output ranges	4-20 mA, 0-20 mA, 1-5 V, 0-5 V (software selectable for each channel)
Resolution	16 bit
Accuracy	± 0.1% @ 20° C/± 0.2% @ -40 to 70° C
Output update time	1 ms (for both channels)
Settling time	20 ms max. per channel
User load	850 Ω — max for current output. 1 kΩ — min for voltage output
Output protection	Protected against continuous short circuit
Failsafe	Yes, software configurable on any channel

Schneider Electric

70 Mechanic Street
Foxborough, MA 02035 USA
+1 877 342 5173

schneider-electric.com/processautomation

Life Is On

Schneider
Electric