Foxboro Evo™ Process Automation System

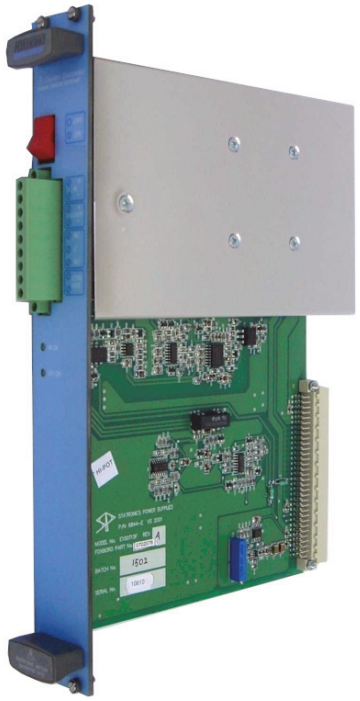
Product Specifications

Foxboro®

by Schneider Electric

PSS 31H-8G4

SCD5200 Wide Range Input Power Supply Module



OVERVIEW

The SCD5200 Wide Range Input Power Supply Module is a power supply module for use with larger SCD5200 configurations (more than five input output or communications modules). In other SCD5200 configurations, the COPE Module's integrated power supply is used (refer PSS 31H-8G1 SCD5200 Architecture and PSS 31H-8G3 SCD5200 COPE Module).

The Power Supply Module is sized to accommodate a fully populated ten I/O file. The power supply is located in the first slot of the file.

The power supply internal to the COPE Module is not used in ten I/O file configurations. Input supply is connected to the Wide Range 100 W Power Supply Module only.

FEATURES

- Wide range input supply: 18 to 164 V dc positive or negative earth
- Supply the demands of an SCD5200 ten I/O file
- Withstands 4 ms dead shorted supply input
- Over-current and over/under voltage protection
- SCD system failure alarm LED and contact
- Control supply isolation terminals
- Loop power distribution terminals
- Power supply OK and Fail LEDs.

FUNCTIONAL DESCRIPTION

The Power Supply Module provides the regulated +5 V dc, +15 V dc, and -15 V dc operating supplies for an SCD5200 ten I/O file. A 1.000 V dc supply is provided as a reference for internal checking of analog input modules.

A switched mode design provides operation over a wide dc input range from 18 to 164 V, provides high input to output isolation, and minimizes size to weight ratio, while offering high power conversion efficiency and high reliability.

Internal monitoring provides a system reset to the SCD5200 modules should the +5 V supply be abnormal. A front panel INPUT OK LED indicates the supply is normal.

Monitoring of the ±15 V rails is indicated by ±15 V OK LED on the front panel. A relay contact (normal open and normal closed) controlled by the system fail and ±15 V rail fault, is available on the front panel terminals.

The Power Supply Module provides contacts for an external warning lamp or audible alarm to indicate an SCD fault or ±15 V rails fault.

Provision is also made for control supply isolation by wiring an external switch or relay to the Power Supply Module's controls isolate terminals.

Module Description

Each SCD5200 ten I/O card file has a removable Power Supply Module (see Figure 2). Because the larger card file has a dedicated power supply sized to accommodate a fully equipped file, future expansion within the ten I/O file does not require any power supply changes. Regardless of the I/O in a ten I/O file SCD5200, the power supply is always correctly sized.

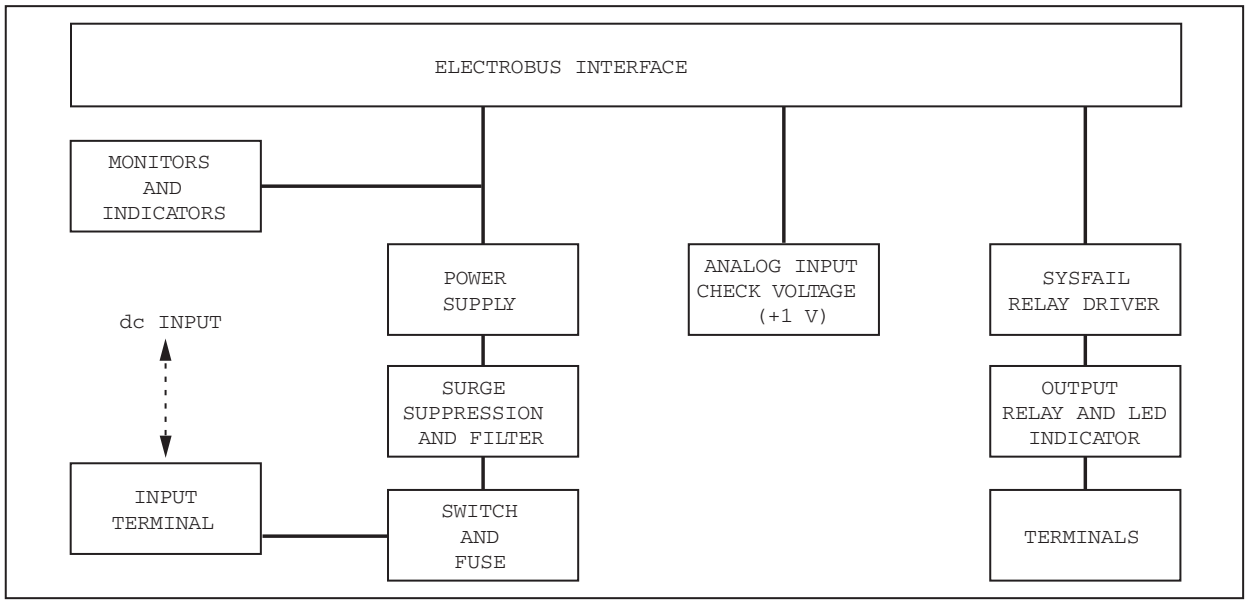


Figure 1. Foxboro Evo SCD5200 Power Supply Module Functional Block Diagram

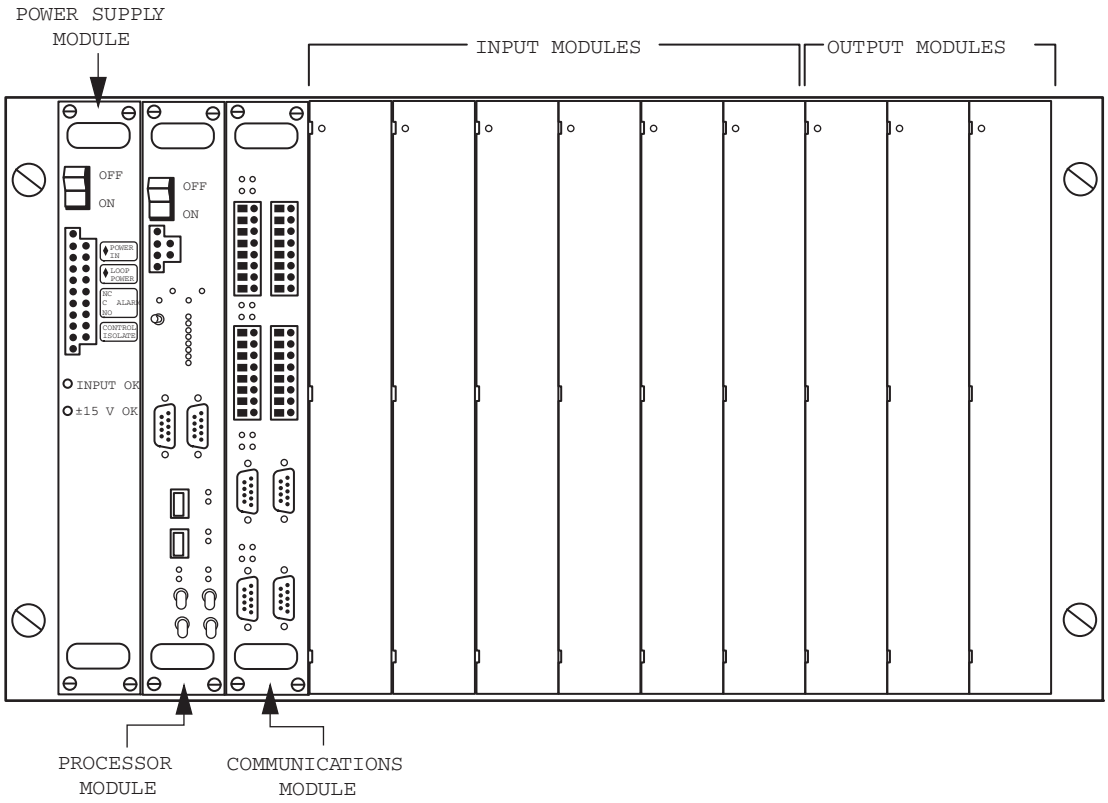


Figure 2. Foxboro Evo SCD5200 Ten I/O File Power Supply System, Example Implementation

Front Panel

The Foxboro Evo™ SCD5200 Wide Range Input Power Supply Module is always located in the first slot of the ten I/O file. (see Figure 2).

The module plugs into a backplane (Electrobus) via a DIN 41612 connector and is double Eurocard size.

The Power Supply Modules can be supplied using a 24, 48, or 129 V dc nominal power source.

The Power Supply Module provides contacts for an external warning lamp or audible alarm to indicate an RTU or ±15 V fault.

Provision is also made for control supply isolation by affixing an external switch or relay.

A pair of terminals provides connection of a remote facility to isolate supply to control outputs.

A front panel power switch is provided.

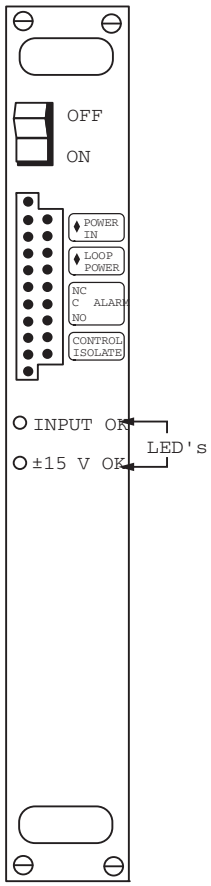


Figure 3. Front Panel

ELECTRICAL SPECIFICATIONS(1)

Power Requirements
90 W maximum input

Input Voltage
Wide range input voltage 18 to 164 V dc

Output Capability
+5 V at 9 A
+15 V at 1 A
–15 V at 0.35 A
Maximum output of 65 watts total permitted

Input Current
5 A maximum at 18 V
0.54 A maximum at 164 V

Efficiency
>70% at full load with nominal input voltage

Current Limit
Shutdown at maximum power with auto-recovery

Over-Voltage Protection
Crowbar protection set at 6.25 V

(1) The specifications contained in this are effective 2011-07-15 and are UL certified. Previous versions of this Product Specification Sheet (PSS 31H-8G4) listed higher input and output power specifications. Due to regulatory requirements, the power supply's ratings have been adjusted appropriately. No design changes have been made to the power supply. Existing systems based upon the original specifications can continue to use the power supply without modification.

ELECTRICAL SPECIFICATIONS (CONTINUED)

Under-Voltage Protection
Shutdown at low input voltage

Hold-up Time
Withstands 4 ms dead shorted power supply input

Ripple and Noise
50 mV peak-peak (+5 V)
100 mV peak-peak (±15 V)

Isolation
2000 V ac RMS for 1 minute
Primary-to-Chassis and Primary-to-Secondary isolation

Transient Protection
IEC 255-4 class 3 (5 kV impulse, 2.5 kV HFD)
ANSI IEEE C37.90.1 (as above)
IEC 61000-4-4 Level 3 (2 kV)
IEC 61000-4-5 Level 3 (2 kV)

EMC Conducted Noise
EN50011 Class B

Fail Alarm Output
Relay output contact to terminals controlled by Electrobus SYSFAIL signal and ±15 V rail fault

LED Indications
Input voltage OK, ±15 V within limits

On Board Fuse
10A/250 V Type T, 20 x 5 mm

ENVIRONMENTAL SPECIFICATIONS

Operating Temperature
0°C to 60°C (32°F to 140°F)

Humidity
10% to 95% (noncondensing)

Cooling
Natural convection, no forced cooling required

PHYSICAL SPECIFICATIONS

Physical Size
The module requires frame space of 35.56 mm.

The module is double Eurocard size (233.4 mm x 160 mm board, 261.8 x 182 x 35.3 mm module.

ORDERING INFORMATION

Part Number	Description
SY-0399131	SCD5200 Power Supply Module

Foxboro®

by Schneider Electric

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