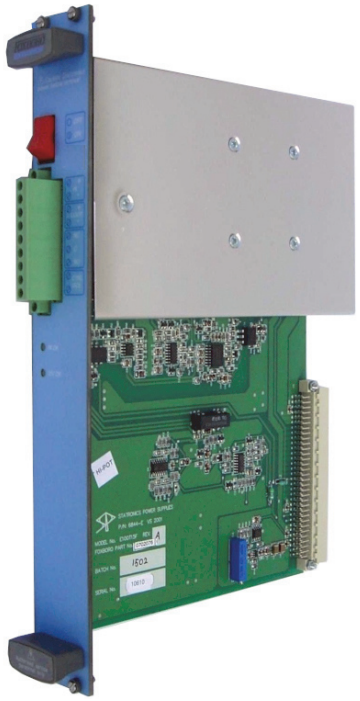
Foxboro Evo™ Process Automation System

Product Specifications

Foxboro® by Schneider Electric

PSS 31H-8K3

Foxboro Evo™ SCD6000 Wide Range Input Power Supply Module



INTRODUCTION

The Wide Range Input Power Supply module is used with larger SCD6000 and SCD5200 configurations (more than five input output or communications modules). The integrated power supply of the COPE module is used in other configurations. Refer to PSS 31H-8K2.

Located in the first slot of the file, the Power Supply module accommodates a fully populated ten I/O file. The input supply is connected to this module only. The COPE module power supply is not used in ten I/O file configurations.

FEATURES

- Input supply: 19.2V to 148V DC positive or negative earth
- Meet the demands of a 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 module provides the regulated +5 V dc, +15 V dc, and -15 V dc operating supplies for a ten I/O file. A 1.000 V dc supply is provided as a reference for the internal checking of analog input modules.

A switched mode design provides operation over a wide dc input range from 19.2V to 148V, 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 RTU modules if the +5 V supply is abnormal. A front panel INPUT OK LED indicates the supply is normal.

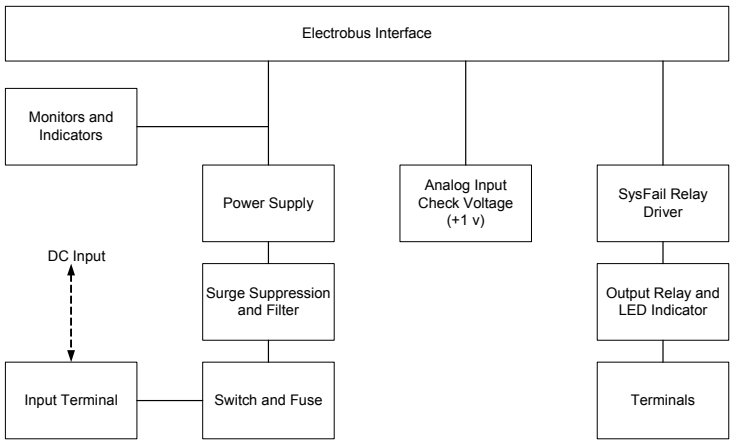


Figure 1. Power Supply Module Functional Block Diagram

The ±15 V rails are monitored and the status is indicated by the ±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.

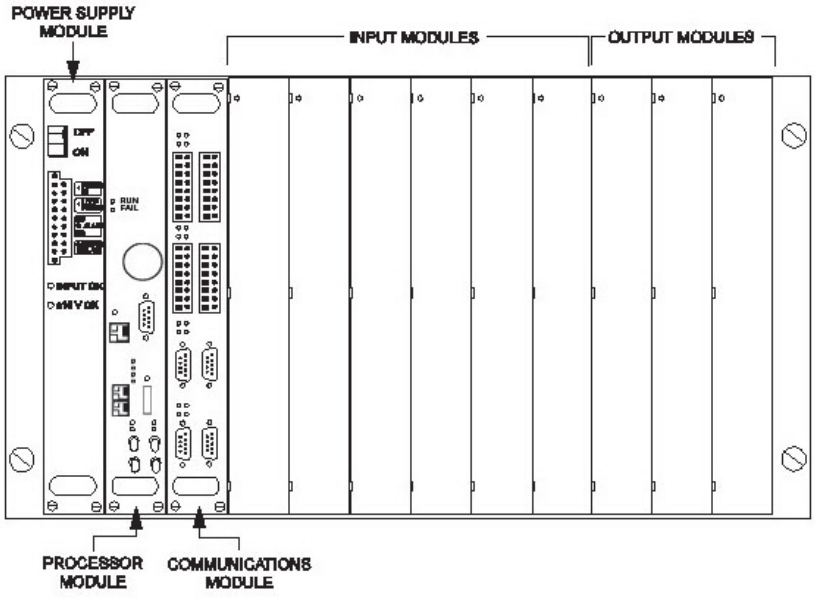


Figure 2. Ten I/O File Power Supply System for SCD5200, Example Implementation

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

To isolate the control supply, wire an external switch or relay to the controls isolate terminals of the module.

Module Description

Each ten I/O card file has a removable Power Supply module (see Figure 2). Future expansion within the ten I/O file does not require any power supply changes because the larger card file has a dedicated power supply sized to accommodate a fully equipped file. The power supply is always correctly sized regardless of the I/O in the ten I/O file.

Front Panel

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

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

You can isolate the control supply by affixing an external switch or relay.

A pair of terminals are connected to a remote facility for isolating supply to control outputs.

A front panel power switch is provided.

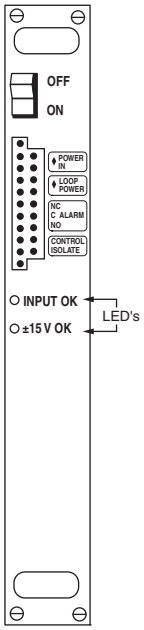


Figure 3. Front Panel

ELECTRICAL SPECIFICATIONS

Power Requirements
90 W maximum input

Input Voltage
Wide range input voltage 19.2V to 148V 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
4.7 A maximum at 19.2V
0.60 A maximum at 148V

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

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

ELECTRICAL SPECIFICATIONS (CONTINUED)

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.

PRODUCT SAFETY

This product complies with the U.S. Standard for Safety UL 61010-1 - Safety requirements for Electrical equipment for measurement, control, and laboratory use - PART 1: GENERAL REQUIREMENTS - Edition 2 - Revision Date 2008/10/28 and CSA C22.2 NO. 61010-1 - Safety requirements for Electrical equipment for measurement, control, and laboratory use.

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	Wide Input Range Power Supply Module

Foxboro®

by Schneider Electric

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