SY8800

Universal Multichannel Low Voltage Power Supply System

2500 @ 220 Vac 1250 @ 110 Vac	3300 @ 200 Vac / 2000 @ 115 Vac	19”
Max power (W)	Power requirements	Width

The SY8800 is a factory-configured, high-density floating low-voltage power supply system in a 3U × 19″, 35 cm deep crate. It provides up to 2.5 kW @ 220Vac or 1.5 kW @ 115Vac, with five slots hosting up to eight independent channels. Available 550 W and 1100 W modules cover 2–7 V, ±7–16 V and ±20–28 V ranges. Channels offer 10 mV voltage resolution, individual ON/OFF and TRIP, remote sensing, and low noise. Local or remote control is provided via Ethernet, USB, CANBUS and RS232; four analog inputs, four digital inputs and four digital outputs support integration.

Overview

Product Highlights

- Factory configured modular system
- 3U x 19″ x 35 cm crate size
- Local and Remote Control
- Max output power: 2.5kW @ 220Vac, 1.5kW @ 115Vac
- Low noise
- 5 free slots for power supply modules
- Floating channels
- Remote control via Ethernet, USB, CANBUS and RS232
- Up to 8 independent channels
- Available Modules:
  - 2÷7V 550W (110A @5V) 1 slot
  - 2÷7V 1100W (220A @5V) 2 slot
  - ±7÷16V 550W (23A @±12V) 1 slot
  - ±7÷16V 1100W (46A @±12V) 2 slot
  - ±20÷28V 550W (11A @±24V) 1 slot
  - ±20÷28V 1100W (22A @±24V) 2 slot
  - 10 mV Voltage Set/Monitor resolution
  - 100/200 mA Current Set/Monitor resolution (2÷7V)
  - 20/40mA Current Set/Monitor resolution (±7÷16V/ ±20÷28V)
  - Individual channel ON/OFF and TRIP
  - Sense wires for the voltage drop recovery
  - 4 Analog Input, 4 Digital Input, 4 Digital Output
  - Fans embedded for vertical cooling

Product Description

AT A GLANCE	
Max power (W)	**2500 @ 220 Vac 1250 @ 110 Vac**
Power requirements	**3300 @ 200 Vac / 2000 @ 115 Vac**
Width	**19”**
Height	**3U**
Depth	**35 cm**
Max # channels	**-**

The CAEN **Mod. SY8800** is a high-density, **floating low voltage power supply system** designed to power low-noise front-end electronics that need medium to high currents. It fits in a compact 3U × 19″ crate, 35 cm deep. It delivers up to 2.5 kW from 230 Vac mains and hosts up to five power modules, for a maximum of eight independent floating channels. Each system is configured at the factory according to the user’s requirements.

Power modules

The modules cover three output ranges: 2–7 V, ±7–16 V and ±20–28 V. Each range comes in a 550 W single-slot version and an 1100 W double-slot version.

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Code	Output range	Power	Typical current	Channels	Slots
M01	2–7 V	550 W	110 A @ 5 V	1	1
M21	2–7 V	1100 W	220 A @ 5 V	1	2
B01	±7–16 V	550 W	23 A @ ±12 V	2	1
B21	±7–16 V	1100 W	46 A @ ±12 V	2	2
B02	±20–28 V	550 W	11 A @ ±24 V	2	1
B22	±20–28 V	1100 W	22 A @ ±24 V	2	2

All modules set and monitor voltage with 10 mV resolution. Current resolution is 100/200 mA on the 2–7 V modules and 20/40 mA on the ±7–16 V and ±20–28 V modules. Every channel can be switched on and off individually. Ripple stays below 10 mVpp, and load regulation is within 10–15 mV for a 0–100% load change. Remote sensing lines on each channel compensate for the voltage drop along the connection cables, so the load receives exactly the programmed voltage.

Control and integration

The system can be operated locally from the front-panel display, or remotely via Ethernet (10Base-T), USB (Type B), CAN bus and RS232. Remote integration into custom control software is supported by the CAEN HV Wrapper Library. Four analog inputs, four digital inputs and four digital outputs connect the system to external signals. The firmware can be upgraded via Ethernet. For technical information on the connectors, see our connectors reference page.

Protection and safety

Each channel is protected against overvoltage, undervoltage and overcurrent:

- **Overvoltage:** a channel is tripped off when its output exceeds the programmable maximum voltage (VOVP).
- **Undervoltage:** a channel is tripped off when its output falls below 90% of the set value.
- **Overcurrent:** a channel that tries to draw more than its programmed limit enters TRIP status. It then acts as a current generator, holding the maximum allowed current for a programmable time before switching off.

Ramp-up and ramp-down times can be set independently for each channel. An interlock logic can enable or disable channels, and a safety interlock disables the outputs when they are not connected to their loads. Over-temperature protection trips off a power block that exceeds 90 °C and signals a warning when the control section exceeds 65 °C. Embedded fans provide vertical cooling, allowing operation from 0 to 50 °C without derating.

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Technical Specifications

Mechanical Packaging	3U x 19″ x 35 cm crate size; weight: 17kg

Mains input

- Auto range: 92 ÷264 Vac, 50÷60 Hz
- Inrush current: <16 A @ 230 Vac
- Power Factor: > 0.98 @ Output Power > 1 kW

Maximum Total OutputPower	1250 W @ 100 Vac, 2530 W @ 211 Vac
Interface	RS232, USB (2.0), CAN bus, Ethernet
Fuse	External 16 A, type B/C
Maximum currents	110/220 A @ +5 V, 23/46A @ ±12 V, 11/28 A @ ±24V
Power Modules	Max 5 Modules of width = 1
Load Regulation	< 10 mV for 0-100% load change @ 2V÷7V < 15 mV for 0-100% load change @ ± 7V÷16V < 15 mV for 0-100% load change @ ± 20V÷28V
Efficiency	75% ÷ 85% @ 230 Vac configuration dependent
Temperature sensors	Power Supply Control: nr. 1

Voltage Protection

- Over Voltage: Trip Off when the output voltage > VOVP (programmable)
- Under Voltage: Trip Off when the output voltage < 90% of set voltage
- Over Current: Trip Off when the current > programmable Iset value

Over Temperature Protection	Trip Off when temperature of a single Power Supply block > 90° C Signaled when temperature Power Supply Control > 65° C
Operation	0÷50°C without derating
Firmware	SY8800 firmware can be upgraded via Ethernet

Power Factor Correction Module

- Input voltage: 92 ÷ 264 Vac
- Frequency 50 ÷ 60 Hz
- Inrush Current: <16 A @ 230 Vac, Fuse External 16A type B/C, Power Factor > 0.98 @ Output Power > 1 kW
- Fuse External: 16A type B/C, Power Factor > 0.98 @ Output Power > 1 kW
- Power Factor: > 0.98 @ Output Power > 1 kW
- Maximum Total Output Power: 1200 W @ 100 Vac, 2530 W @ 211 Vac
- Turn on Delay: 50 ms to 100% of voltage, monotonic rise
- Efficiency: 75% ÷ 85% @ 230 Vac configuration dependent

Power Module (2V÷7V)

- Voltage: 2V ÷ 7V
- Current: 115 A / 230 A
- Ramp Up/Down & Trip time: Max 5s; 10 ms step
- Ripple: Max: < 10 mVpp, Typ: 6.0 mVpp
- Voltage Accuracy: ± 20 mV
- Load Regulation: < 10 mV (sense) for 0-100% load change
- Transient Response Recovery:
  - < 100 mV @ ±25A current step change
  - 6 ms for recovery to ±1% of set voltage @ 25A to 0A current step change
  - 0.5 ms for recovery to ± 1% of set voltage @ ±25A current step change
  - 0.7 ms for recovery to ± 0.1% of set voltage @ ±25A current step change
- Flicker immunity: <50 ms

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Power Module (+/- 7V-16V)

- Voltage: ±7V ÷ ±16V
- Current: 23 A / 46 A
- Ramp Up/Down & Trip time: Max 5s; 10 ms step
- Ripple: Max < 10 mVpp, Typ: 4.5 mVpp
- Voltage Accuracy: ± 20 mV
- Load Regulation: < 15 mV for 0-100% load change
- Transient Response Recovery:
  - < 100 mV @ ±5A current step change
  - 8 ms for recovery to ±1% of set voltage @ 5A to 0A current step change
  - 1.0 ms for recovery to ± 1% of set voltage @ ±5A current step change
  - 1.8 ms for recovery to ± 0.1% of set voltage @ ±5A current step change
- Flicker immunity: <30 ms

Power Module (+/- 20V-28V)

- Voltage: ± 20V÷28V
- Current: 23 A / 46 A
- Ramp Up/Down time; Trip time: Max 5s; 10 ms step
- Ripple: Max < 10 mVpp, Typ: 4.5 mVpp
- Voltage Accuracy: ± 20 mV
- Load Regulation: < 15 mV for 0-100% load change
- Transient Response Recovery:
  - < 100 mV @ ±5A current step change
  - 8 ms for recovery to ±1% of set voltage @ 5A to 0A current step change
  - 1.0 ms for recovery to ± 1% of set voltage @ ±5A current step change
  - 1.8 ms for recovery to ± 0.1% of set voltage @ ±5A current step change
- Flicker immunity: < 30 ms

Ordering Information

ORDERING CODE	DESCRIPTION
WPERS8800B01	B01 – 2 Ch. LV Floating Power Module ± 7V÷16V /23A (550W)
WPERS8800B02	B02 – 2 Ch. LV Floating Power Module ± 20V÷28V/ 11A (550W)
WPERS8800B21	B21 – 2 Ch. LV Floating Power Module ± 7V÷16V/ 46A (1100W)
WPERS8800B22	B22 – 2 Ch. LV Floating Power Module ± 20V÷28V/ 22A (1100W)
WPERS8800M01	M01 – 1 Ch. LV Floating Power Module 2V÷7V / 110A(550W)
WPERS8800M21	M21 – 1 Ch. LV Floating Power Module 2V÷7V / 220A(1100W)
WSY8800XXXXX	SY8800 – Universal Multichannel Low Voltage PowerSupply System (1250W US – 2500W EU)

1. Ordering codes and descriptions are reproduced from the product record. Availability is confirmed at order entry.

Software & Control Tools

CAEN HV Wrapper Library — Library for CAEN Power Supply Control