SY5527

Universal Multichannel Power Supply System / 19”wide, 4U-high (6 slot)

Features

- Available in a fully equipped option: **SY5527 Premium Version**
- Communications via Gigabit Ethernet
- Communications via Wi-Fi (optional)
- OPC Server to ease integration in DCS
- Fast, accurate setting and monitoring of channel parameters
- 5.7" colour touchscreen LCD (optional)
- Live insertion of boards
- Advanced Trip handling
- Hardware current protection
- Modular and expandable power supply
- Secure access to the system via Intranet
- Application software for remote control
- Graphical web interface
- Easy firmware upgrading

Description

The **CAEN Mod. SY5527** is the fully equipped experiment version of a new line of power supply systems which represent CAEN's latest proposal in the matter of High Voltage and Low Voltage Power Supplying. This system outlines a completely new approach to power generation and distribution by allowing the housing, in the same mainframe, of a wide range of boards with different functions, such as High/Low Voltage boards, generic I/O boards (temperature, pressure monitors, etc.) and branch controllers, where the latter are used to control other remote generators and distributors. Modularity, flexibility and reliability are the key-points of its design, enabling this module to meet the requirements needed in a wide range of experimental conditions. The mainframe is housed in a 19"-wide, 4U-high euro-mechanics rack and hosts four main sections:

- the **Board Section**, with 6 slots to house boards, distributors and branch controllers; "Low cost" version with 4 slots is available
- the **Fan Tray Section**, housing 3 fans arranged on two rows, with programmable rotation speed regulation;
- the **CPU and Front Panel Section** which includes all interface facilities.
- the **Power Supply Section**, which consists of the Primary power supply and one “Booster” unit; "Low cost" version has only the Primary power supply

The CPU controller is available in 3 different versions: **BASIC, ADVANCED and FULL**.

- The **BASIC** version provides all the communication interfaces, the RESET control, the INTERLOCK control and status LEDs.
- The **ADVANCED** version also provides the beam handshake management connectors (CH-ON, GEN, VSEL, ISEL).
- The **FULL** version provides the complete set of panel connectors, the ENABLE control section, and the fan speed control.

Model	A4528 Full	A4528 Advanced	A5228 Basic
Reset In	Yes	Yes	Yes
Interlock In	Yes	Yes	Yes
Fan Speed	Yes	-	-
Vset/Iset	Yes	Yes	-
Status Out	Yes	Yes	-
Kill In	Yes	-	-
Remote Enable	Yes	-	-

The Power Supply Unit (PSU) is also available in three versions: **PRIMARY, OPTIONAL SINGLE** and **OPTIONAL DOUBLE**.

- The Primary PSU (A4531) is the standard SY5527 power supply block. It includes the SERVICE and 600W PSU within a single slot module. The SY5527 includes one A4531 Primary Power Supply
- The Optional Single PSU provides an additional 600W of power in a single slot module
- The Optional Double PSU provides an additional 1200W of power in a single slot module

***Please note**: The PRIMARY PSU will be providing power to the boards installed into the mainframe as well as to the motherboard control electronics (CPU). When configuring the SY5527 power output customers should take this factor into consideration. For some applications, especially those which include Low Voltage/High Amperage boards, the power requirement must be carefully considered to avoid failures and maximum component life expectancy. For configuration questions or concerns we recommend that you contact your CAEN representative and/or technical support.*

The User Software Interface features the usual friendliness of the previous CAEN systems which now also can optionally include a **5.7" colour touchscreen LCD** (not available on Low Cost version) . Modularity has been one of the leading criteria in the design and development of the system: both the Power Supply Section and the Board Section are completely modular. The Power Supply Section allows different configurations with up to 2 power supply units per mainframe (up to 1800 W), while the Board Section can house up to 6 boards able to perform different functions. The complete line of power supply boards and distributors that has been specially developed for SY1527 are fully compatible with the new mainframes.

The **minimum working system configuration** consists of the primary power supply, one CPU controller and one board. The system allows also to deal with power supply solutions composed by "branch controllers"

(housed in the system mainframe) and on-detector "remote boards" (manufactured in order to be magnetic field and radiation tolerant). A sophisticated trip handling via software allows to control and correlate trip conditions on the channels of the crate. Live insertion and extraction of the boards, which reduces the down time of the global system and eases access to the computing core and peripherals of the system, complete the system flexibility.
Easy interfacing is another key-point of the SY5527 system. The **Gigabit Ethernet** interface (and the optional **Wi- Fi** interface) allows both an easy web access and the connection via OPC Server to a SCADA control system. Enhanced software programming features a unified command set independent from the interface used to communicate with the system. The Power Supply Section and Board Section can be externally synchronised via front panel connectors. Handy maintenance and upgrading, which constitute a major issue in the reliability of a system, are further guaranteed by the possibility of accessing and servicing the system via network facilities.

Advanced Software
The new SY5527 beneficial of a complete set of **Software Tools** to control the unit and all the parameters of the High Voltage and Low Voltage boards, from low level **libraries** to **graphical application** software.

In addition the advanced version of the GECO2020 software introduces **Logging and Scripting Capability**.
The Logger is a useful tool which records every command sent to the system and every warning/alarm detected by the system. In this way it is possible to automatically monitor the behavior of every single parameter during operations. Complex and advanced commands can be managed through the Scripting capability. Based on a simple proprietary syntax, this tool ensures flexible and fully customizable control on every system and board aspect.
Two new powerful improvements has been carried out on the new backplane:

- A new 48V Power Bus distribution
- FLEXRAY Fast Serial Link

Technical Specifications

Packaging

19"-wide, 4U-high Euro-mechanics rack

- Width: 19'' (483 mm)
- Height: 4U (177 mm)
- Depth: 747 mm / 667 mm (without handles)

Weight

Mainframe (*): 14 kg
One Primary PSU (**A4531**) and one CPU(**A4528**) are included; boards are not included

(*) One Primary Power Supply (Mod.A4531) and one CPU (Mod.A4528) are included; boards are not included.

Ventilation sound pressure level

- High: 78.5 dBA
- Medium: 67.5 dBA
- Low: 48 dBA

Power Requirement

- Voltage range: 100/240 Vac
- Max current: 25 A
- Max Power: 2500 W @ 220 Vac; 2340 W @ 110 Vac
- Frequency: 50/60 Hz Fuse 10x38 25A Rapid 600V

Max. number of boards per crate

6 (4 on Low Cost version)

Max. number of Power Supply Units per crate

2 (1 Primary + 1 Optional) (**)

(**) See SY5527 Output Power

Primary Power Supply Unit output power

600 W (220 Vac Mains)
550 W (110 Vac Mains)

Optional Power Supply Unit output power

- Single Version: 600 W (200 Vac Mains); 550 W (110 Vac Mains)
- Double Version: 1200 W (220 Vac Mains) ; 110 W (110 Vac Mains)

Max. output power

- 1800 W (220 Vac Mains)
- 1650 W (110 Vac Mains); 600W on Low Cost version

CPU

3 versions: BASIC, ADVANCED and FULL

Display

5.7" Colour Touchscreen LCD (optional) with two USB 2.0 ports for event logging, configuration backup & restore; not available on Low Cost version

Communication

- Gigabit Ethernet
- Wi-Fi (optional)

Software

- Graphical interface control software
- OS Platforms: MS Windows, Linux
- Web Configurator tool

Enhanced Software (optional)

Includes advanced features like Logging, Scripting, Alarm handling

Additional features

- OPC Server compatibility
- Removable fan unit
- FLEXRAY Fast Serial Link

Environmental requirements

- Operating temperature: from 0°C to +40°C
- Operating humidity: from 10% to +90% non-condensing
- Storage temperature: from -30°C to +80°C
- Storage humidity: 5% to 90% non-condensing

Ordering Options

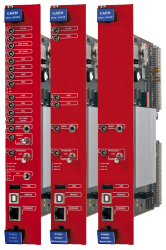
Code	Description	
WSY5527ADVXA	SY5527 - Universal Multichannel Power Supply System - ADVANCED 600W	RoHS
WSY5527BSCXA	SY5527 - Universal Multichannel Power Supply System - BASIC 600W	RoHS
WSY5527FLLXA	SY5527 - Universal Multichannel Power Supply System - FULL 600W	RoHS
WSY5527PREXA	SY5527 Premium - Includes SY5527 FULL, A5534C, A4535, SW4536	RoHS

Accessories

A4531

SY4527/SY5527 Primary Power Supply 600W

A4528



SY4527/SY5527 CPU Module

A5534C

SY5527 5.7" LCD Touchscreen colour Display Unit

A4532

SY4527/SY5527 Optional Single Power Supply Unit 600W

A4533

SY4527/SY5527 Optional Double Power Supply Unit 1200W

Related Software

HIVOCS

Web based Control Software for SY4527 and SY5527 Systems

EPICS IOC (SY4527 / SY5527)

EPICS IOC for SY4527 and SY5527 Systems

GECO2020

GEneral COntrol Software for CAEN HV Power Supplies

OPC Server

OPC Server for CAEN Power Supplies

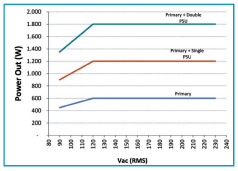
Related Software Libraries

CAEN HV Wrapper Library

Library for CAEN Power Supply Control

Gallery

Maximum Output Power vs. Power Supply Units and power voltage line



SY5527

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