Datasheet

SR100 Estélas Low-Noise Power Supply

- 42HP/3U desktop case
- 230 V or 115 V AC input
- Chassis isolated outputs

 $+5 \, V/2.2 \, A$ $+15 \, V/2.2 \, A$

- $-15 \, V/2.2 \, A$
- +24 V/1 A (optional)
- High control accuracy low residual ripple
- Linear control low EMI
- High reliability
- Ultra-low voltage noise:
 - $$\label{eq:loss} \begin{split} \mbox{density} &\leq 100\,\mbox{nV}/\sqrt{\mbox{Hz}} \\ \mbox{ripple} &\leq 1\,\mbox{mV}_{\mbox{RMS}} \end{split}$$
- Custom configurations

Overview

 Image: Constraint of the constraint

The SR100 *Estélas* is a low-noise power supply providing ± 15 V (SR103) and +5 V and optionally +24 V (SR104). The SR100 was first designed to provide a quiet environment to operate our ultra-low noise laser current sources of the SMC-Series. For this purpose, three SPS20 *Cagire* modules are assembled in a 3U desktop case to power up to 2 complete laser diode controllers and their dedicated laser frequency control electronics (SMA- and SMB-Series). Because they have little to no ability to reject supply variations, many RF subsystems should also benefit from the low-noise features of the SR100 *Estélas* to prevent unwanted side bands and low signal-to-noise ratio.

Two standard configurations are available : the SR103 features three DC outputs (+5V and +/-15V) while the SR104 provides an additional +24V output. Contact us for custom configurations. The mains input voltage selection is set at factory and should be specified along with the DC output configuration.

The DC output voltages are available at the front panel through 4 pairs of 2-mm banana jacks. These connectors are dedicated to prototyping only since powering *Sisyph's Reference Solutions* should use the DSUB connectors located on the rear panel of the case. Refer to the block diagram online for more details.



Important Notice

The specifications provided apply to the SR100-R21A power supply. Information in this document is subject to change without notice. Copyright © SISYPH, 2021. All rights reserved.

Technical Data

Input

Mains Voltage (factory set) Mains Current at $230 V_{RMS}$

Mains Frequency Range Power Entry

Output

Output Voltage (factory set)

Ripple^a Voltage Noise Density ^a Power Outputs

Protection and Monitoring

Current Limitation ^{a,b} Overload Protection ^{a,b} Overvoltage Protection ^{a,b} Overtemperature Protection ^{a,b} Power Is Good Monitor ^{a,b} Overtemperature Monitor^{a,b} Current Limitation Monitor ^{a,b}

Test and Environmental Conditions

Height Depth $255\,\mathrm{mm}$ Width Weight Cooling Environmental temperature Environmental humidity < 60 %

 $115\,V_{\rm RMS}$ or $230\,V_{\rm RMS}$ $\leq 630 \,\mathrm{mA_{RMS}}$ (SR103) $\leq 800 \,\mathrm{mA_{RMS}}$ (SR104) $48-62\,\mathrm{Hz}$ IEC inlet (rear panel) Mains filter w/ dual fuse holder and 2-pole rocker switch

 $+5.2\,{
m V}$ $+15.2\,{
m V}$ $-15.2\,{
m V}$ +24.2 V (SR104 only) $\leq 1\,\mathrm{mV}$ $\leq 100 \,\mathrm{nV}/\sqrt{\mathrm{Hz}} @1 \,\mathrm{kHz}$ Dual DSUB 7W2 connector (rear panel) 4 pairs of 2-mm banana jacks (front panel) ON/OFF switch (front panel)

Constant current Foldback characteristic Crowbar topology (thyristor) Thermal shutdown Green led (front panel) Yellow led (front panel) Red led (front panel)

 $133 \,\mathrm{mm} \, (3\mathrm{U})$ $236 \,\mathrm{mm} \, (42 \mathrm{HP})$ 4700 g (SR103) 5500 g (SR104) Convection^c $\geq 15^{\circ}$ and $\leq 30^{\circ}$

 $^{\mathrm{a}}\mathrm{Refer}$ to the SPS20 $\mathit{Cagire}\xspace$'s data sheet for detailled information.

^bApply for each SPS20 *Cagire* power module.

^cOptional forced convection is also available: fan coolers can be mounted on the internal backplane.



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Connection Cables

An IEC cable is required to connect the SR100 Power Supply to the mains input voltages. One (1) cable is included with each power supply unit. Note that the DC Power Cable (SCB101) required to connect the power supply the Sisyph's Reference Solutions is not included and should be ordered separately.

Ordering Information

AC Input
SR10x-230 (EUR)
SR10x-115 (USA)
DC Outputs
SR103-xxx (triple)
SR104-xxx (quad)
Example of Ordering Code
SR103-230

230 V 115 V +5 V, ±15 V +5 V, ±15 V, +24 V AC Input: 230 V

DC Outputs: +5 V, $\pm 15 V$

Document Identifier

 ${\rm SR100}\text{-}{\rm SS02}\text{-}{\rm I21A}$



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