

# Small Instrumentation Modules

*SIM928 — Rechargeable isolated voltage source*

- **$\pm 20$  V isolated voltage source**
- **Ultra-low noise output**
- **Two switchable, recharging batteries for continuous operation**
- **Battery lifetime: 1000 charge cycles**
- **Output floats to  $\pm 40$  V**
- **Short-circuit protected**



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## **SIM928 Isolated Voltage Source**

The SIM928 Isolated Voltage Source is ideal for applications where ultra-clean DC voltage is required. Voltage can be set between  $\pm 20$  VDC with millivolt resolution, and the source can drive up to  $\pm 10$  mA. The output circuit is optically isolated from all earth-referenced charging circuitry, providing maximum flexibility and noise immunity. The system can float to  $\pm 40$  V, and the output is short-circuit protected.

At the heart of the SIM928 are two independent nickel-metal-hydride rechargeable batteries, each providing up to 12 hours of operation under full-load conditions. When a battery is nearly depleted, the SIM928 automatically switches in a second battery. The switchover between batteries is virtually glitch-free, giving you uninterrupted power around the clock. The depleted battery is automatically charged to capacity in about 5 hours. The batteries are guaranteed for 1000 charging cycles, and SRS offers replacement battery sets.

In applications that occur over long time intervals, starting with a fully charged battery may be desirable. A battery charge override feature allows you to manually switch in the fully charged battery (assuming it is in “ready” state) at any time.

Banana binding posts are provided for the + terminal, – terminal and chassis ground.

## Output

|                        |                                 |
|------------------------|---------------------------------|
| Output range           | ±20 V, 1 mV resolution          |
| Max. output current    | ±10 mA                          |
| Floating output        | ±40 V (common mode to ground)   |
| Noise                  | 10 $\mu$ Vrms (1 kHz bandwidth) |
| Current limit          | 15 mA                           |
| Short-circuit duration | indefinite                      |

## Batteries

|                     |   |
|---------------------|---|
| Number of batteries | 2 (1 operating, 1 charging/standby)                                       |
| Type                | Nickel metal hydride  |
| Charge time         | 5 hrs.  |
| Discharge time      | 12 hrs. (10 mA load)  |
| Lifetime            | >1000 charge cycles, 2 yr. shelf life                                     |
| Battery switching   | Automatically switches batteries when active battery is fully discharged. |

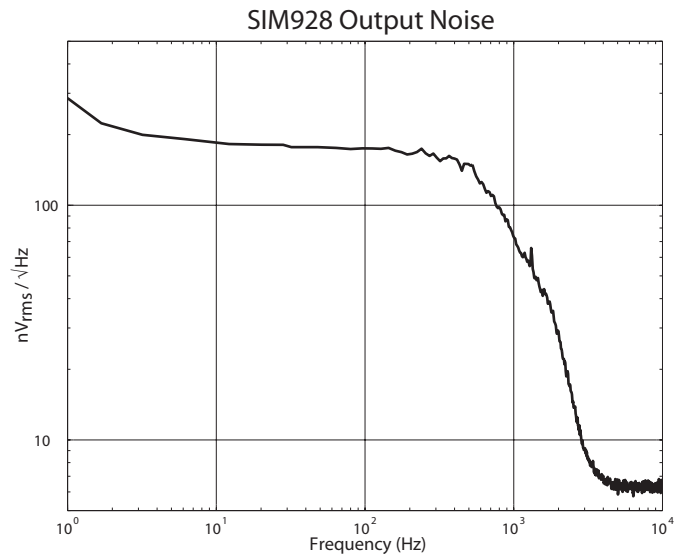
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|-------------------------|---|
| Switchover glitch       | <1 mV for <1 ms   |
| Battery charge override | Allows manual switching of batteries. Triggered when front-panel button is held for 5 seconds or more. Only armed when standby battery is in ready state. |

## General

|                       |  |
|-----------------------|--|
| Operating temperature | 0 °C to 40 °C, non-condensing  |
| Interface             | Serial via SIM interface   |
| Connectors            | Banana binding posts (+ terminal, – terminal, and chassis ground)<br>DB15 (male) SIM interface |
| Power                 | Powered by SIM900 Mainframe, or by user-provided DC power supply (+24 V, –15 V and +5 V)       |
| Dimensions            | 1.5" × 3.6" × 7.0" (WHD)   |
| Weight                | 3 lbs.   |
| Warranty              | One year parts and labor on defects in materials and workmanship                               |



SIM928 rear panel



## Ordering Information

|         |                              |
|---------|------------------------------|
| SIM928  | Isolated voltage source      |
| O928RBA | Replacement battery assembly |