AMREL ePower™ SPS-K 1.5kW PROGRAMMABLE DC POWER SUPPLY

SPS-K 1.5kW Features and Benefits

- **Exclusive 800Vdc Model:** Achieve test results with voltage ratings you need
- **Industry's Best Cost-to-Feature Ratio**: Feature-packed at an affordable value
- **Maximizes your ROI:**
  - In-rack closed-case digital calibration saves annual calibration costs
  - Standard Over-Voltage, Over-Current and Over-Temperature Protection
  - In-field firmware updates keep the SPS features and functions up-to-date
- **Widest Selection:** Your choice of 14 models or tailor your SPS today
- **Wide Continuous AC Input:** Single Phase 85~265Vac @ 47 ~ 63Hz
- **Rack-mount Ready:** Standard 19" rack mount kit included
- **Ideal for Bench-top or Lab Bench Applications:**
  - Four 20-step VLIST or ILIST Auto-sequencing profiles to automate tests
  - 16X2 VFD for 16-bit 4-digit Voltage & Current Read Back replaces DMM
  - Exclusive Digital Encoder and Keypad for user-friendly control interface
- **Increased Reliability:** front & rear air circulation effectively cools high-heat power components to ensure performance under high ambient conditions
- **High Power Density:** 1.5kW in a 1U package
- **Quiet and Powerful:** Fan-speed control to reduce acoustic noise
- **Designed for ATE Applications:** Wide selection of GPIB/RS-232/USB/Ethernet interfaces, standard LabView and LabWindow Drivers, and SCPI command set allows ATE system integration with simplicity and ease
- **Advanced Remote Fault Monitoring:**
  - Fault Dry Contact for automated protection trip alarms
  - Remote Shut Down for interlock and redundant system protection
- **Two modes in one:** Operate in CV, CC or Auto-crossover mode with ease
- **Parallel or Series Operation:** For your high current/voltage applications
- **Test Flexibly:** Remote Sensing compensates line-drop measurement errors
- **Safety First:** Quickly drains Output Voltage during protection trips
- **More Options:** AMREL's Exclusive Solid-state or Standard Mechanical Polarity Reversal & Isolation Relays
- **System Expansion Ready:** Master-slave multiple units via single PC connection
- **AMREL's Unique Advantage:** Modified & Customized Solutions Available

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Markets and Applications

- Aerospace and Satellite Testing
- Test and Measurement (ATE)
- Water Purification
- Semiconductor Processing
- Industrial Automation
- Gas, Chemical, Petroleum & Utility Plants
- EOL Test, QC and Inspection
- Automotive Component, ECU, & HIL Testing
- Telecommunications & IT
- Industrial Automation & Process Control
- Magnets, RF Amplifiers & Beam Steering
- Heater Supplies
- Battery Validation & Testing
- Electroplating, Sputtering & Coating
- Electrical Component Validation
- Laser Diode Validation & Testing
- PV Inverter & Renewable Energy R&D

SPS-K 1.5kW PRODUCT NOTE

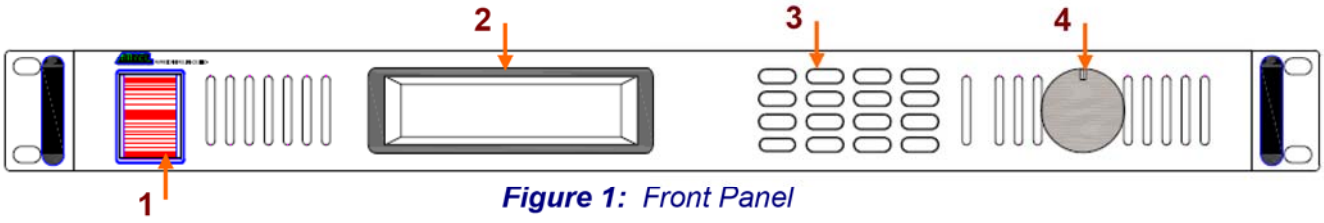

Figure 1: *Front Panel*

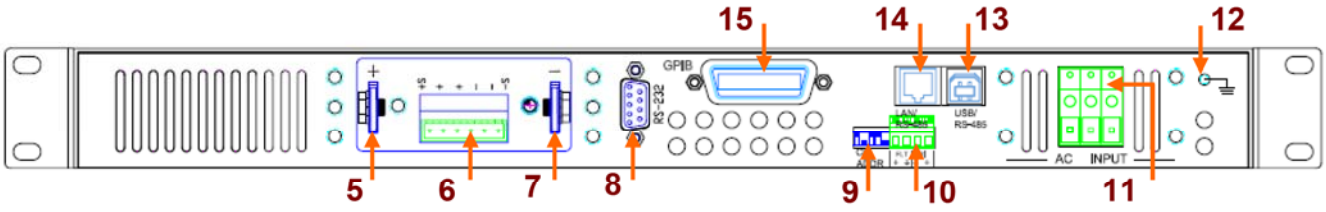

Figure 2: *Rear Panel*

1. AC Power Switch & Indicator
2. 16X2 VFD Display
3. Keypad
4. Digital Encoder
5. DC Output + Terminal
6. Remote Sense Connector *(**Figure 3:** Pin-out Description)*
7. DC Output - Terminal
8. RS-232 DB-9 Connector
9. Channel Address Selection (SPSXXX-XXX-KX5X Units)
10. Remote Inhibit and Fault Signal Output *(**Figure 4:** Pin-out Description)*
11. AC Input Terminal (**Note:** *Please use at least 14AWG Wire)*
12. Earth Ground Pin
13. USB Interface or RS-485 Interface RJ-45 Connector
14. Ethernet RJ-45 Connector
15. IEEE488.2/GPIB Connector

1	2	3	4	5	6
+OUT	+OUT	+S	-S	-OUT	-OUT

Figure 3: *Remote Sense Pin Definition*

1	2	5	6
FL+	FL-	RI+	RI-

Figure 4: *Remote Inhibit/Fault Signal Pin-out*

FL+ and FL- Description:

FL+: Fault Output Signal + Terminal
FL-: Fault Output Signal – Terminal
Normal State: Low/0Vdc Output
Fault State: High/5Vdc Output

RI+ and RI- Description:

RI+: Fault Output Signal + Terminal
RI-: Fault Output Signal – Terminal
Short: Shutdown DC Output
Open: Normal DC Operation

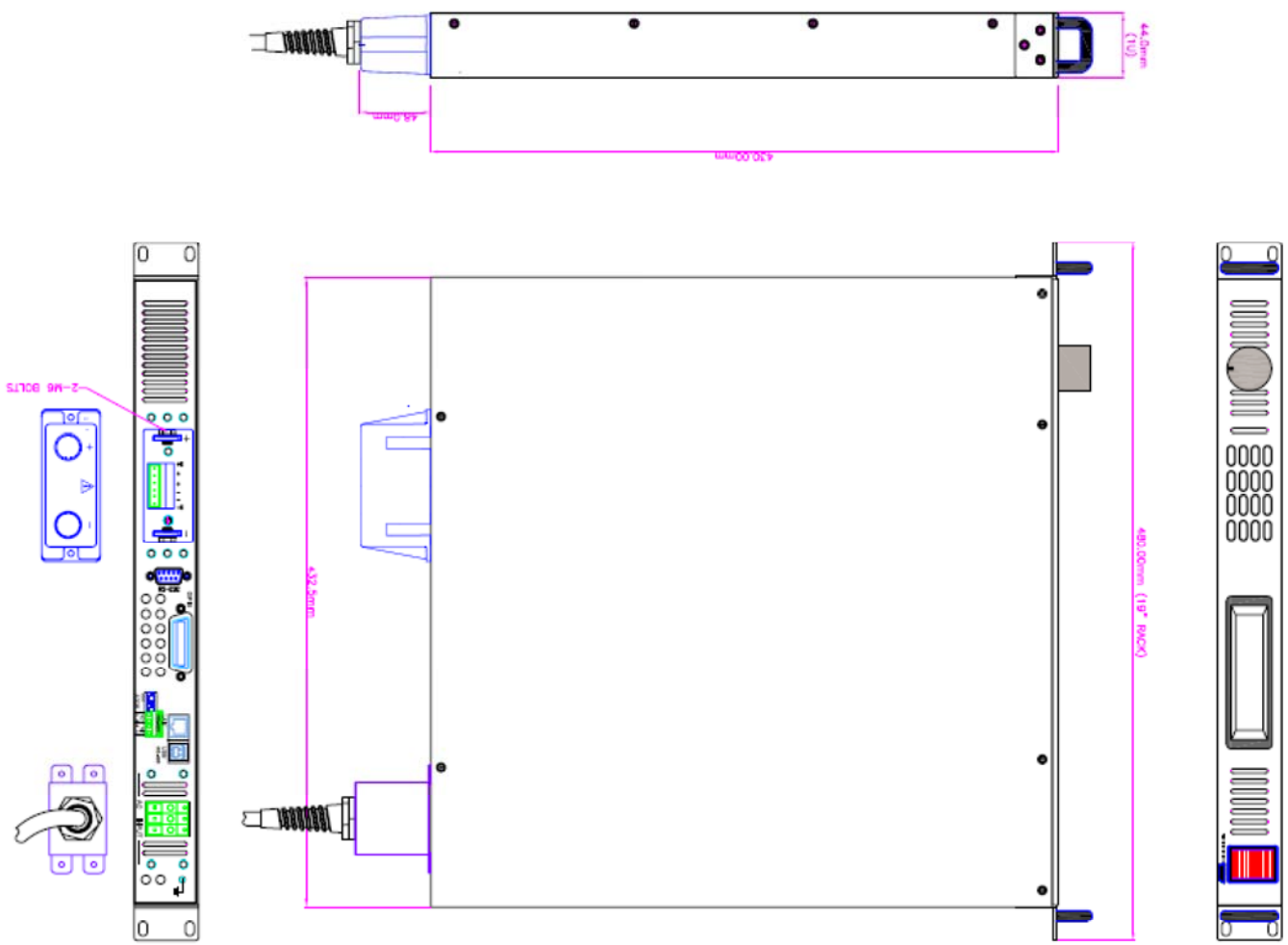

Figure 5: *Dimensional Drawing (3-D View)*

Selector Guide: SPSZ-Y-KXU9

Z: Max Voltage Rating
Y: Max Current Rating

X: 0 = None
R = Reverse Polarity/Isolation Relay
S = Solid State Reverse Polarity/Isolation Relay

U: E = Ethernet/USB/RS-232/GPIB
5 = Ethernet/RS-485/RS-232/GPIB

Model	Power	Voltage	Current	PARD[4] (RMS)	PARD[4] (pk-pk)	Tup/Tdn[6] (ms)
12-125	1.5kW	12Vdc	125Adc	12	75	100/100
20-75	1.5kW	20Vdc	75Adc	8	50	100/100
30-50	1.5kW	30Vdc	50Adc	8	50	100/100
40-37.5	1.5kW	40Vdc	37.5Adc	8	50	100/100
60-25	1.5kW	60Vdc	25Adc	10	50	100/100
80-18	1.5kW	80Vdc	18Adc	10	75	100/100
100-15	1.5kW	100Vdc	15Adc	10	75	100/100
150-10	1.5kW	150Vdc	10Adc	15	150	170/170
200-7.5	1.5kW	200Vdc	7.5Adc	15	150	170/170
300-5	1.5kW	300Vdc	5Adc	25	250	170/170
400-4	1.5kW	400Vdc	4Adc	25	250	170/170
500-3	1.5kW	500Vdc	3Adc	25	250	170/170
600-2.5	1.5kW	600Vdc	2.5Adc	40	400	170/170
800-1.8	1.44kW	800Vdc	1.8Adc	40	400	170/170

Common Specifications[1]:

Programming Accuracy
Voltage: 0.05%*V_{MAX} + 0.1% of FS
Current: 0.05%*I_{MAX} + 0.05% of FS
Over-voltage: 0.2% of Vout + 0.3% of FS

Measurement Accuracy
Voltage: 0.1% of RDG + 0.1% of FS
Current: 0.1% of RDG + 0.2% of FS

Load Regulation[2]
Voltage: 0.01%*V_{MAX} + 2 mV
Current: 0.01%*I_{MAX} + 2 mA

Line Regulation[3]
Voltage: 0.001%*V_{MAX} + 2 mV
Current: 0.001%*I_{MAX} + 2 mA

Transient Response Time: 3ms[5]

Programming/Measurement Resolution: 14-bit

OVP Programmable Range:
5% - 110% of V_{MAX}

Drift[7] (8 Hours):
CV Mode: 0.5%*V_{MAX}
CC Mode: 0.5%*I_{MAX}

Temp. Cofficient[8]:
CV Mode: 0.02%*V_{MAX} / °C
CC Mode: 0.03%*I_{MAX} / °C

PFC AC Input:
1Φ 85 ~ 265Vac/45 ~ 63Hz

DC Output Isolation: ***≤400Vdc:*** ±600Vdc; ***≤600Vdc:*** ±1000Vdc; ***800Vdc:*** ±1500Vdc

*1: All electrical specifications are subject to change without prior notice
*2: Load regulation is specified for 10 - 90% load change
*3: Line regulation is specified for line voltage variation over the AC input voltage range with constant rated load
*4: Ripple and Noise (PARD) is specified for 10 - 95% output voltage @ full output current
*5: Time for output voltage to recover within +/- 0.5% of $V_{FULL-SCALE}$ following a 10% ~ 60% load current change
*6: Programming speed (Tup/Tdn) is specified @ 50% of full current loading
*7: Drift is specified over an 8-hour period with constant line, load, & temperature; after 30 minutes of warm-up
*8: Temperature coefficient is specified for changes in output/ °C in ambient temperature @ constant line & load

AMREL
AMERICAN RELIANCE, INC.
www.amrel.com pdinfo@amrel.com
3445 Fletcher Ave., El Monte, CA 91731 800 654-9838 (US) 626 443-6818 (INTL)