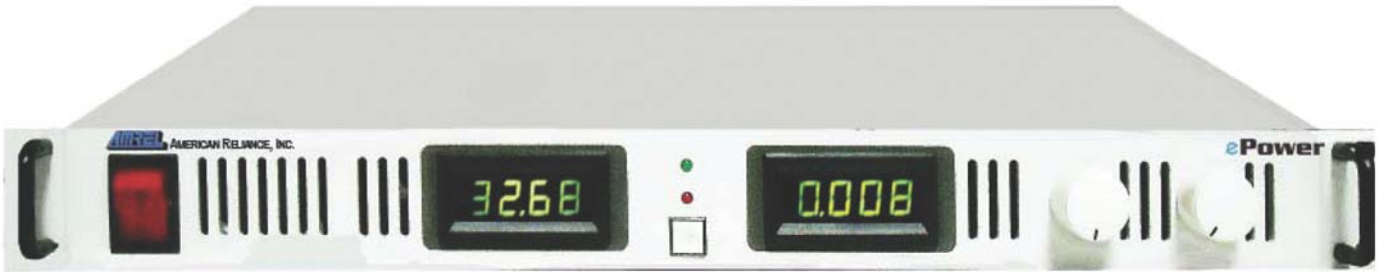


AMREL **ePower** SPS-V 1.5kW PROGRAMMABLE DC POWER SUPPLY



SPS-V 1.5kW Features and Benefits

- **Exclusive 800Vdc Model:** Achieve test results with voltage ratings you need
- **Industry's Best Cost-to-Power Ratio:** Why pay for features you don't need?
- **Widest Selection:** Your choice of 12 models or tailor your SPS today
- **Wide Continuous AC Input:** Single Phase 85~265Vac @ 47 ~ 63Hz
- **Bench or Rack-mount Compatible:** 19" for ATE System Integration
- **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 Specifically for PLC and DAQ Systems:** Standard-version or Optional Isolated-version Analog Programming and Monitoring
- **Advanced Remote Control & Monitoring:**
 - Fault Dry Contact for automated protection trip alarms
 - Remote Shut Down for interlock and redundant system protection
 - Flexible 0 ~ 5 or 0 ~ 10Vdc Range Selection
 - Factory Configured Voltage or Resistance Programming
- **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
- **AMREL's Unique Advantage:** Modified & Customized Solutions

Markets and Applications

- Aerospace and Satellite Testing
- Test and Measurement
- 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-V 1.5kW PRODUCT NOTE

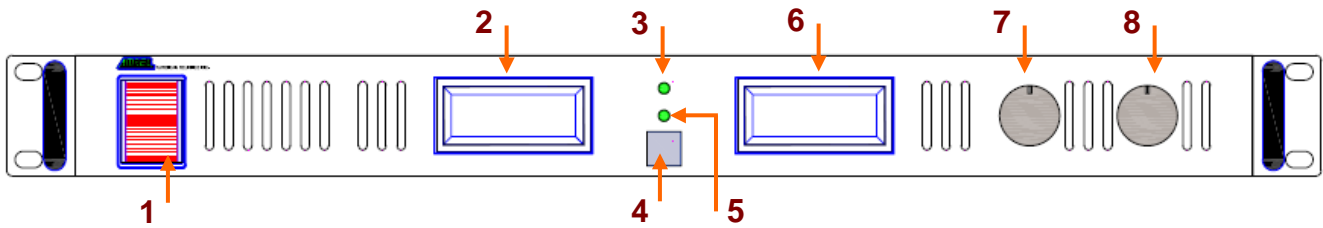


Figure 1: Front Panel

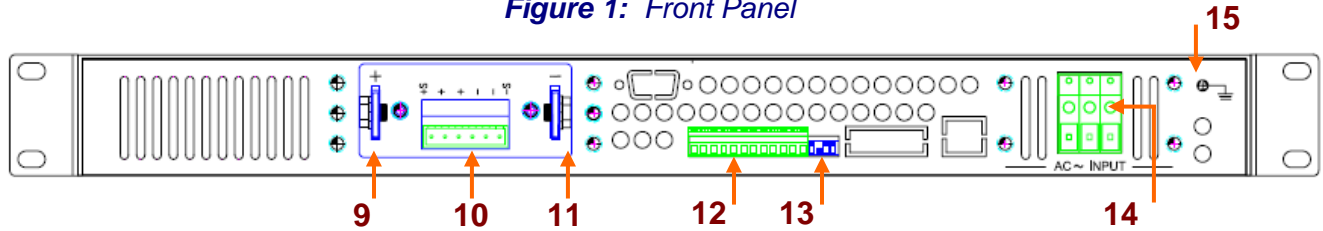


Figure 2: Rear Panel

1. AC Power Switch & Indicator
2. Voltage Meter
3. CV/CC State Indicator LED
4. Fault Condition Indicator LED
5. Front Panel On/Off Key
6. Current Meter
7. Voltage Adjust Control Knob
8. Current Adjust Control Knob
9. DC Output + Terminal
10. Remote Sense Connector (**Figure 3: Pin-out Description**)
11. DC Output – Terminal
12. 12-Pin External Analog Programming Port (**Figure 4: Pin-out Description**)
13. 4-pin Control Selection Dip Switch (**Figure 5: Dip Switch Description**)
14. AC Input Terminal (**Note: Please use at least 14AWG Wire**)
15. Earth Ground Pin

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

Figure 3: Remote Sense Pin Definition

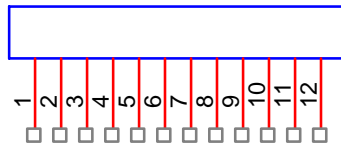
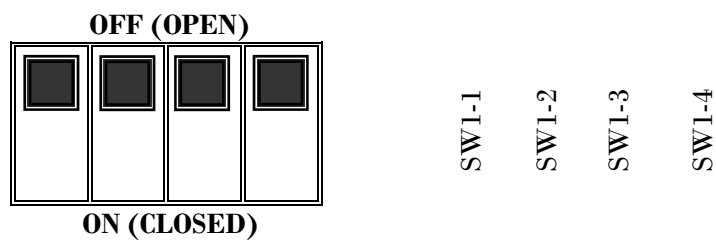


Figure 4: 12-Pin External Analog Programming Port Pin-out Description

| | |
|---------------|-------------------------------------------------------------------|
| 1. SD + | Remote On/Off (Shutdown) Signal |
| 2. SD - | Remote On/Off (Shutdown) Signal Return |
| 3. FLT_OUT | Fault Dry Contact (NO = Normal State / NC = Fault State) |
| 4. FLT_GND | Fault Dry Contact Common |
| 5. IMON + | Current Monitor Signal |
| 6. IMON - | Current Monitor Signal Return |
| 7. VMON + | Voltage Monitor Signal |
| 8. VMON - | Voltage Monitor Signal Return |
| 9. EXTCC | External Analog Current Control Signal |
| 10. EXTCC_GND | External Analog Current Control Signal Return |
| 11. EXTCV | External Analog Voltage Control Signal |
| 12. EXTCV_GND | External Analog Voltage Control Signal Return |



| | SW1-1 | SW1-2 | SW1-3 | SW1-4 |
|--------------------|--------------------|------------------|---------------|--------------|
| STATE | REMOTE ON/OFF | DOWN-PROGRAMMING | EXT_PRG RANGE | LOCAL/REMOTE |
| OFF(OPEN) | LO – ON HI – OFF | DISABLED | 0 ~ 10Vdc | REMOTE CTRL |
| ON (CLOSED) | HI – ON LO – OFF | ENABLED | 0 ~ 5Vdc | LOCAL CTRL |

Figure 5: 4-Pin Control Selection Pin-out Description

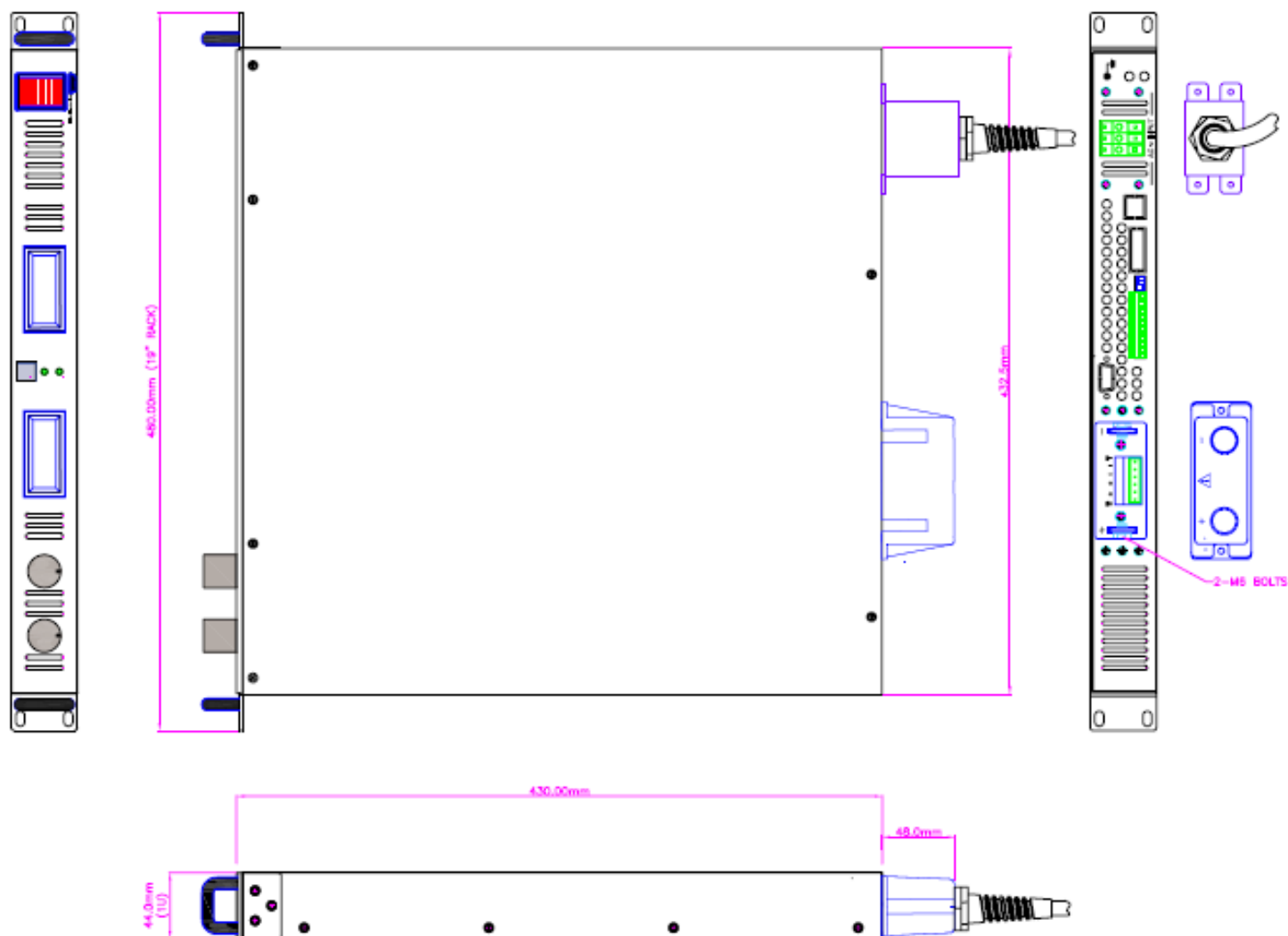


Figure 6: Dimensional Drawing (3-D View)

Selector Guide: SPSZ-Y-VXU9

Z: Max Voltage Rating

Y: Max Current Rating

X: 0 = None; I = Isolated Analog Programming

U: 0 = None

2 = RS-232/GPIB Option

(Not available with I-option)

| 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 | 10 | 70 | 100/100 |
| 30-50 | 1.5kW | 30Vdc | 50Adc | 10 | 50 | 100/100 |
| 40-37.5 | 1.5kW | 40Vdc | 37.5Adc | 10 | 50 | 100/100 |
| 60-25 | 1.5kW | 60Vdc | 25Adc | 10 | 50 | 100/100 |
| 100-15 | 1.5kW | 100Vdc | 15Adc | 10 | 75 | 100/100 |
| 150-10 | 1.5kW | 150Vdc | 10Adc | 15 | 150 | 170/170 |
| 300-5 | 1.5kW | 300Vdc | 5Adc | 25 | 300 | 170/170 |
| 400-4 | 1.5kW | 400Vdc | 4Adc | 30 | 350 | 170/170 |
| 500-3 | 1.5kW | 500Vdc | 3Adc | 40 | 400 | 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 Specifications¹:

Local Meter Accuracy

Voltage: $0.5\% \cdot V_{MAX} + 1 \text{ count}$

Current: $1\% \cdot I_{MAX} + 1 \text{ count}$

External Programming & Measurement Accuracy

Voltage: $1\% \text{ of } V_{MAX}$

Current: $1\% \text{ of } I_{MAX}$

Remote Programming Accuracy⁷

Voltage: $0.05\% \cdot V_{SET} + 0.1\% \cdot V_{MAX}$

Current: $0.05\% \cdot I_{SET} + 0.1\% \cdot I_{MAX}$

Remote Measurement Accuracy⁷

Voltage: $0.1\% \cdot \text{RDG} + 0.1\% \cdot V_{MAX}$

Current: $0.1\% \cdot \text{RDG} + 0.2\% \cdot I_{MAX}$

Transient Response Time: 3ms^5

Over-Voltage Protection:

$110\% \text{ of } V_{MAX}$

Load Regulation²

Voltage: $0.02\% \cdot V_{MAX} + 5 \text{ mV}$

Current: $0.03\% \cdot I_{MAX} + 5 \text{ mA}$

Line Regulation³

Voltage: $0.01\% \cdot V_{MAX} + 2 \text{ mV}$

Current: $0.01\% \cdot I_{MAX} + 2 \text{ mA}$

AC Input:

$1\Phi \ 85 \sim 265\text{Vac}/45 \sim 63\text{Hz}$

DC Output Isolation: $\leq 400\text{Vdc}$: $\pm 600\text{Vdc}$;

$\leq 600\text{Vdc}$: $\pm 1000\text{Vdc}$; 800Vdc : $\pm 1500\text{Vdc}$

*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 - 100% output voltage @ full output current

*5: Time for output voltage to recover within $\pm 0.5\%$ of $V_{FULL-SCALE}$ following a 10% ~ 60% load current change

*6: Programming speed (Tup/Tdn) is specified @ 50% of full current loading

*7: Remote Programming and Measurement Accuracy is for GPIB/RS-232 Option