## Features

- Voltage Rating:
- 100V/15A
- Output Power Rating: 1500W
- C.V / C.C Priority Mode
- Adjustable Voltage/Current Rise and Fall Time
- Series/ Parallel Connection:
- Max. 2 Units (model unver 300V) / 4 Units of The Same Model
- High Efficiency and High-Power Density
- 1U Height and 19” Rack Mount Size
- Three sets of Preset Function
- Bleeder Control Function
- Panel Lock Function
- Protection: OVP, OCP, OHP, UVL, AC Fail, FAN Fail
- Standard Interface: USB, LAN, RS-232, RS-485, Analog Control
- Optional Interface: GPIB, Isolated Analog Interface (Voltage Control/Current Control)

# RS PRO Programmable Switching DC Power Supply

RS Stock No.: 0642978 and 0642977

RS PRO is the own brand of RS. The RS PRO Seal of Approval is your assurance of professional quality, a guarantee that every part is rigorously tested, inspected, and audited against demanding standards. Making RS PRO the Smart Choice for our customers.

## General Specifications

| Model | | | 0642970 | 0642969 |
|---|---|---|---|---|
| Rated output voltage (*1) | | V | 15 | 100 |
| Rated output current (*2) | | A | 100 | 15 |
| Rated output power | | W | 1500 | 1500 |
| Constant Voltage Mode | | | | |
| Line regulation (*3) | | mV | 3.5 | 12 |
| Load regulation (*4) | | mV | 3.5 | 12 |
| Ripple & noise (*5) | p-p (*6) | mV | 60 | 80 |
| | r.m.s. (*7) | mV | 8 | 8 |
| Temperature coefficient | | ppm/°C | 100 ppm/°C of rated output voltage, after a 30 minute warn-up | |
| Remote sense compensation voltage (single wire) | | V | 1 | 5 |
| Rise time (*8) | Rated load | ms | 80 | 150 |
| | No load | ms | 80 | 150 |
| Fall time (*9) | Rated load | ms | 50 | 150 |
| | No load | ms | 700 | 1500 |
| Transient response time (*10) | | ms | 1 | 1 |
| Constant Current Mode | | | | |
| Line regulation (*3) | | mA | 12 | 3.5 |
| Load regulation (*11) | | mA | 25 | 8.0 |
| Ripple & noise (*12) | r.m.s. | mA | 200 | 45 |
| Temperature coefficient | | ppm/°C | 100 ppm/°C of rated output voltage, after a 30 minute warn-up | |
| Protection function | | | | |
| Over voltage protection (OVP) | Setting range | V | 1.5-16.5 | 5-110 |
| | Setting accuracy | mV | 150 | 1000 |
| Over current protection (OCP) | Setting range | A | 5-110 | 1.5-16.5 |
| | Setting accuracy | mA | 2000 | 300 |
| Under voltage limits (UVL) | Setting range | | 0~15.75 | 0-105 |
| Over temperature protection (OHP) | Operation | | Turn the output off. | |
| Incorrect sensing connection protection (SENSE) | Operation | | Turn the output off. | |
| Low AC input protection (AC-FAIL) | Operation | | Turn the output off. | |
| Shutdown (SD) | Operation | | Turn the output off. | |
| Power limits (POWER LIMIT) | Operation | | Over power limit. | |
| | Value (fixed) | | Approx. 105% of rated output power | |
| External voltage control output voltage | Accuracy & linearity | | : ±0.5% of rated output voltage | |
| External voltage control output current | Accuracy & linearity | | : ±1% of rated output current | |
| External resistor control output voltage | Accuracy & linearity | | : ±1% of rated output voltage | |

| | | | |
|---|---|---|---|
| External resistor control output voltage | Accuracy & linearity | | : ±1.5% of rated output current |

| Analog Programming and Monitoring | | | | |
|---|---|---|---|---|
| Output voltage monitor | Accuracy | | : ±1% | |
| Output current monitor | Accuracy | | : ±1% | |
| Shutdown control | | | Turns the output off with a LOW (0V to 0.5V) or short circuit | |
| Output on/off control | | | Possible logic selections:<br>Turn the output on using a LOW (0V to 0.5V) or short-circuit, turn the output off using a HIGH (4.5V to 5V) or open-circuit.<br>Turn the output on using a HIGH (4.5V to 5V) or open-circuit, turn the output off using a LOW (0V to 0.5V) or short-circuit. | |
| Alarm clear control | | | Clear alarms with a LOW (0V to 0.5V) or short-circuit | |
| CV/CC/ALM/PWR ON/OUT ON indicator | | | Photo coupler open collector output; Maximum voltage 30V, maximum sink current 8mA | |
| Trigger out | | | Maximum low level output = 0.8V; minimum high level output = 2V; Maximum source current = 8mA | |
| Trigger in | | | Maximum low level input voltage = 0.8V; minimum high level input votage = 2.0V, Maximum sink current = 8mA | |
| Front Panel | | | 0642970 | 0642969 |
| Display, 4 digits | 0.1%+ | mV | 30 | 200 |
| | 0.2%+ | mA | 300 | 45 |
| Indications | | | GREEN LED's:<br>CV, CC, V, A, VSR, ISR, DLY, RMT, LAN, M1, M2, M3, RUN, Output ON<br>RED LED's: ALM, ERR | |
| Buttons | | | Lock/Local(Unlock), PROT(ALM_CLR), Function(M1), Test(M2), Set(M3), Shift, Output | |
| Knobs | | | Voltage, Current | |
| USB port | | | Type A USB connector | |
| Programming and Measurement (RS-232/485, USB, LAN, GPIB) | | | 0642970 | 0642969 |
| Output voltage programming accuracy | 0.05% + | mV | 7.5 | 50 |
| Output current programming accuracy | 0.2% + | mA | 100 | 15 |
| Output voltage programming resolution | | mV | 0.5 | 3.4 |
| Output voltage programming resolution | | mA | 3.3 | 0.5 |
| Output voltage measurement accuracy | 0.1% + | mV | 15 | 100 |
| Output current measurement accuracy | 0.2% + | mA | 200 | 30 |
| Output voltage measurement resolution | | mV | 0.5 | 3.4 |
| Output voltage measurement resolution | | mA | 3.3 | 0.5 |
| Input Characteristics | | | 0642970 | 0642969 |

| | | | | |
|---|---|---|---|---|
| Nominal input rating | | | 100Vac to 240Vac, 50Hz to 60Hz, single phase | |
| Input voltage range | | | 85Vac ~ 265Vac | |
| Input frequency range | | | 47Hz ~ 63Hz | |
| Maximum input current | 100Vac / 200Vac | A | 21 / 11 | |
| Inrush current | | | Less than 50A | |
| Maximum input power | | VA | 2000 | |
| Power factor | 100Vac / 200Vac | 8 | 0.99 / 0.98 | |
| Efficiency (*13) | 100Vac / 200Vac | % | 82 / 85 | 84 / 87 |
| Hold-up time | | | 20ms or greater | |
| **Interface Capabilities** | | | | |
| USB | Type A: Host, Type B: Slave,<br>Speed: 1.1/2.0, USB<br>Class: CDC(Communications Device Class) | | | |
| LAN | MAC Address, DNS IP Address, User Password, Gateway IP Address, Instrument IP Address, Subnet Mask | | | |
| RS-232 / RS-485 | Complies with EIA232D / EIA485 Specifications | | | |
| GPIB (Factory Option) | SCPI - 1993, IEEE 488.2 compliant interface | | | |
| **Isolated Analog Control Interface (Factory Option)** | | | | |
| Voltage Control | PSU-ISO-V | Using 0-5V or 0-10V signals for programming and measurement | | |
| Current Control | PSU-ISO-I | Using 4-20mA current signals for programming and measurement | | |
| **Environmental Conditions** | | | | |
| Operation temperature | 0□C to 50□C (*14) | | | |
| Storage temperature | -25□C to 70□C | | | |
| Operating humidity | | | 20% to 85% RH; No condensation | |
| Storage humidity | | | 90% RH or less; No condensation | |
| Altitude | | | Maximum 2000m | |
| **General Specifications** | | | | |
| Weight | Main unit only | kg | Less than 8.7kg | |
| Dimensions | (WxHxD) | mm | 423 x 43.6 x 447.2 | |
| Cooling | | | Forced air cooling by internal fan | |
| EMC | | | Complies with the European EMC directive for Class A test and measurement products. | |
| Safety | | | Complies with the European Low Voltage Directive and carries the CE-marking | |
| Withstand voltage | | | AC to Chassis: 1500Vac/1min<br>AC to Output terminal: 3000Vac/1min<br>Output terminal to Chassis:<br>Vout ≤ 150V: 1000Vdc/1min<br>150V<Vout ≤600V: 1500Vdc/1min | |

| | | | |
|---|---|---|---|
| Insulation resistance | | | Chassis and output terminal; chassis and AC input; AC input and output terminal: 100MΩ or more (DC 1000V) |

Notes:
*1 Minimum voltage is guaranteed to maximum 0.2% of the rated output voltage.
*2 Minimum current is guaranteed to maximum 0.4% of the rated output current.
*3 At 85 ~ 132Vac or 170 ~ 265Vac, constant load.
*4 From No-load to Full-load, constant input voltage. Measured at the sensing point in Remote Sense.
*5 Measure with JEITA RC-9131B (1:1) probe
*6 Measurement frequency bandwidth is 10Hz to 20MHz.
*7 Measurement frequency bandwidth is 5Hz to 1MHz.
*8 From 10% to 90% of rated output voltage, with rated resistive load.
*9 From 90% to 10% of rated output voltage, with rated resistive load.
*10 Time for output voltage to recover within 0.5% of its rated output for a load change from 0 to 90% of its rated output current. Voltage set point from 10% to 100% of rated output.
*11 For load voltage change, equal to the unit voltage rating, constant input voltage.
*12 For 6V~20V model the ripple is measured at 2V ~ rated output voltage and full output current. For other models, the ripple is measured at 10 ~ 100% output voltage and full output current.
*13 At rated output power.
*14 If install the front panel filter kit, the temperature is guaranteed to 40°C.

## Safety Approval

| ◎ **EMC** | |
|---|---|
| EN 61326-1 | Electrical equipment for measurement, control and laboratory use — EMC requirements |
| Conducted & Radiated Emission<br>EN 55011 / EN 55032 | Electrical Fast Transients<br>EN 61000-4-4 |
| Current Harmonics<br>EN 61000-3-2 / EN 61000-3-12 | Surge Immunity<br>EN 61000-4-5 |
| Voltage Fluctuations<br>EN 61000-3-3 / EN 61000-3-11 | Conducted Susceptibility<br>EN 61000-4-6 |
| Electrostatic Discharge<br>EN 61000-4-2 | Power Frequency Magnetic Field<br>EN 61000-4-8 |
| Radiated Immunity<br>EN 61000-4-3 | Voltage Dip/ Interruption<br>EN 61000-4-11 / EN 61000-4-34 |
| ◎ **Safety** | |
| EN 61010-1 : | Safety requirements for electrical equipment for measurement, control, and laboratory use - Part 1: General requirements |

## Order Information

0642970 1500W Programmable Switching DC Power Supply
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**Standard Accessories**

Output terminal cover x 1, Analog connector plug kit x 1
Output terminal M8 bolt set ( 0642970 only)
Input terminal cover x 1

1U Handle (RoHS), 1U Bracket (LEFT, RoHS), 1U Bracket (RIGHT, RoHS)

### Optional Accessories

GPIB Interface Card (Factory Installed)
UL/CSA power cord, 3m
VDE power cord, 3m
PSE power cord, 3m