



1760A

## Model 1760A

### Triple Output DC Power Supply

- Two 0-30 VDC, 2 A sections capable of independent, series or parallel operation
- One 4-6.5 VDC, 5 A section
- Switchable series/parallel operation — 30 V sections
- Adjustable current limit controls — 30 V sections
- Two 3 digit LED displays — one reads volts or amps of "B" supply — one reads volts or amps of "A" supply or 4V-6.5V supply
- Unique variable tracking, B track A at 5% to 100%

## Model 1651A

### Compact Triple Output DC Power Supply

- Two 0 to 24 VDC outputs (0.5A)
- One fixed 5V output (4A)
- Independent or tracking operation
- Adjustable current limiting
- Designed to operate continuously at rated output
- Short circuit protection, overvoltage protection, reverse polarity protection
- Connect outputs in series for higher voltage output or in parallel for higher current output (switch selectable)

## Model 1670A

### Triple Output DC Power Supply

- One variable 0-30 VDC, 3 A section
- One 12 VDC fixed section
- One 5 VDC fixed section
- Ideal for general electronic servicing, school electronics labs, and powering up hobbyists projects



1651A



1670A

# Triple Output DC Power Supplies

## Specifications

| Specifications                                   |                                                                                  | models                                                      |                                               |
|--------------------------------------------------|----------------------------------------------------------------------------------|-------------------------------------------------------------|-----------------------------------------------|
|                                                  | 1760A                                                                            | 1651A                                                       | 1670A                                         |
| Output Voltage                                   | 0-30V (A & B)                                                                    | 0-24 V (A&B)                                                | Main 0-30 VDC                                 |
|                                                  | 4-6.5 V (C)                                                                      | Fixed 5V output                                             | Fixed 12VDC $\pm 5\%$                         |
|                                                  |                                                                                  |                                                             | Fixed 5 VDC $\pm 5\%$                         |
| Output Current                                   | 0-2A (A & B)                                                                     | 0-500 mA (A&B)                                              | Variable 0-3 A Main                           |
|                                                  | 5A (C)                                                                           | Fixed Supply <4 A                                           | Fixed 0-500 mA continuous                     |
|                                                  |                                                                                  |                                                             | Fixed 0-500 mA continuous                     |
| Constant Voltage Operation                       |                                                                                  |                                                             |                                               |
| Voltage Regulation                               |                                                                                  |                                                             |                                               |
| Line (120VAC $\pm 10\%$ )                        | $\leq 0.01\% + 3 \text{ mV}$                                                     | $\leq 0.01\% + 3 \text{ mV}$ Main                           | $\leq 0.05\% + 10\text{mV}$ Main              |
|                                                  |                                                                                  | $\leq 5 \text{ mV}$ for line Fixed supply                   | $\leq 1\%$ (A & B)                            |
| Load                                             | $\leq 0.01\% + 3 \text{ mV}$                                                     | $\leq 0.01\% + 3 \text{ mV}$ Main                           | (0 to rated load) $\leq 0.05\% + 10\text{mV}$ |
|                                                  |                                                                                  | $\leq 10 \text{ mV}$ (Fixed)                                | $\leq 1\%$ (A & B)                            |
| Recovery Time                                    | 100 $\mu\text{s}$                                                                | 100 $\mu\text{s}$                                           | 100 $\mu\text{s}$                             |
| Ripple & Noise                                   | $\leq 1\text{mVrms}$                                                             | $\leq 1\text{mVrms}$                                        | $\leq 1\text{mVrms}$                          |
| Temperature Coefficient                          | $\leq 300 \text{ ppm}^\circ\text{C}$                                             | $\leq 300 \text{ ppm}^\circ\text{C}$                        | $\leq 300 \text{ ppm}^\circ\text{C}$          |
| Constant Current Operation                       |                                                                                  |                                                             |                                               |
| Adjustable Current Range                         | 5% to 100% (A&B)                                                                 | 5% to 100% (A&B)                                            | 5% to 100% (Main)                             |
| Current Regulation                               |                                                                                  |                                                             |                                               |
| Line (120VAC $\pm 10\%$ )                        | $\leq 0.2\% + 3\text{mA}$                                                        | $\leq 0.2\% + 6 \text{ mA}$                                 | $\leq 0.4\% + 10\text{mA}$                    |
| Load                                             | $\leq 0.2\% + 3 \text{ mA}$                                                      | $\leq 0.2\% + 3\mu\text{A}$                                 | $\leq 0.4\% + 10\text{mA}$                    |
| Current Ripple                                   | $\leq 3 \text{ mA}$                                                              | $\leq 3 \text{ mA rms}$                                     | $\leq 10\text{mA rms}$                        |
| Metering                                         |                                                                                  |                                                             |                                               |
| Display                                          | 2 digital LED                                                                    | 2 Analog                                                    | 2 digital LCD                                 |
| Voltmeter Range                                  | 0-99.9 V (A & B)                                                                 | 0 to 25 V                                                   | 0 to 12 VDC 0 to 5 VDC                        |
|                                                  | 0-99.99 V (C)                                                                    |                                                             |                                               |
| Voltmeter Accuracy                               | $\pm (0.5\% \text{ rdg} + 2 \text{ digits})$                                     | 2.5% of full scale                                          | $\pm (1\% \text{ reading} + 2 \text{ digit})$ |
| Ammeter Range                                    | 0-9.99 A                                                                         | 0 to 600 mA                                                 | 0-3 A                                         |
| Ammeter Accuracy                                 | $\pm (0.5\% \text{ rdg} + 2 \text{ digits})$                                     | 2.5% of full scale                                          | $\pm (1\% \text{ reading} + 2 \text{ digit})$ |
| Overload Protection                              | Current limiting, Reverse polarity, overvoltage, Short circuit                   |                                                             |                                               |
| Power Requirements                               | 108-132 VAC 60 Hz, 120/220/230/240/ VAC, $\pm 10\%$ , 50/60 Hz version available |                                                             |                                               |
| Power Consumption                                | 350 W                                                                            | 165 W                                                       | 170 W                                         |
| Operating Temperature                            | -0° to 40°C $\leq 85\%$ R.H.                                                     | 0° to 40°C $\leq 85\%$ R.H.                                 | 0 to 40°C $\leq 75\%$ R.H.                    |
| Storage Temperature                              | -15° to 70°C $\leq 85\%$ R.H.                                                    | -15° to 70°C $\leq 85\%$ R.H.                               | -15° to 70°C $\leq 85\%$ R.H.                 |
| Dimensions (H x W x D)                           | 5.7 x 10.5 x 15"<br>(145 x 267 x 381 mm)                                         | 5.5 x 11.75 x 10.975"<br>(140 x 298 x 264 mm)               | 4.9" x 8.5" x 11.5"<br>(124 x 216 x 292 mm)   |
| Weight                                           | 21 lbs (9.5 kg)                                                                  | 10.5 lbs (4.8 kg)                                           | 11.5 lbs (5.2 kg)                             |
| Accessories                                      | Two Year Warranty                                                                | One Year Warranty                                           |                                               |
| SUPPLIED:                                        | Instruction Manual, Spare Fuse                                                   | Instruction Manual,<br>Test Leads TL-5(3 pairs), Spare Fuse | Instruction Manual                            |
| OPTIONAL (for all models): TL-5A Hook up cables. |                                                                                  |                                                             |                                               |