



Description

The 8052 is a variable DC supply module that provides a simple solution for adjustable high power on the CalBench. It features analogue controls for precision, with coarse and fine voltage adjustment for fast setting with high resolution at all levels. Two versions are available, the standard 8052 and the 8052P programmable version that includes additional front panel features. These PSUs are well suited to general purpose applications for R&M, as well as service and testing work.

Precision Metering: The module incorporates high resolution digital meters for both voltage and current. Voltage and current levels can be set to high accuracy prior to connection to the load and the limit settings can be checked at any time. A damping switch for the current meter enables the average value of fast changing currents to be read.

Linear Post Regulation: The 8052 features a regulator design that combines switch mode pre-regulation with linear post regulation. The pre-regulator uses specially developed techniques to dramatically reduce the capacitance between input and output to eliminate the high levels of common-mode noise normally associated with switch mode PSUs. The linear post regulator combines very low levels of output noise with excellent load regulation and transient response. The result is performance comparable with a pure linear design.

Constant V or Constant I Operation: Operate in both constant voltage and constant current modes with automatic crossover and automatic mode indication.

Over Voltage Protection: The PSU has a fully variable OVP trip to protect against regulator failure. The output is fully protected and other functions provide protection against over-temperature and sense miswiring.

8052P User Features

Additional Display: To provide additional data and to avoid the possibility of ambiguity or error, an auxiliary display is incorporated. All keyboard entries appear on this display for inspection before they are actioned. This failsafe system avoids such possibilities as setting 25 V instead of 2.5 V. The auxiliary display is also used to set and display a variety of useful information. When not being used for other purposes the auxiliary display shows the output power in Watts.

Keyboard or Analogue Control: Voltage and current levels can be entered directly from the keypad to a resolution of 10 mV or 10 mA with speed and precision. Alternatively a rotary control can be used to set voltage or current in a manner simulating a conventional analogue control.

Delta-mode Control: Voltages and currents can be stepped up and down by a fixed increment set from the keypad. This facility is invaluable for repetitive testing where, for example, the effect of 1 % changes in voltage need to be observed. The delta increment is clearly shown on the auxiliary display.

Non-Volatile Settings Storage: 25 non-volatile memories are provided for storing frequently used settings. Each store holds a voltage, current and OVP setting. This facility is particularly useful in repetitive testing applications, development or diagnostics.

Features

- High power DC supply module
- CV and CI operation with automatic crossover
- Very low noise, excellent transient response
- Easy to use analogue controls
- Comprehensive protection including variable OVP trip
- High setting resolution, remote sense terminals
- High accuracy digital meters, current meter damping
- Silent fan-free operation
- Coarse and fine voltage controls for fast setting and resolution

8052P Programmable Version

- Full digital remote control and readback
- RS-232 interface, connected internally to control centre if fitted
- Keyboard setting of all parameters
- Rotary and delta (step) control of voltage and current
- Includes an auxiliary display for convenience and safety
- Non-volatile storage for frequently used settings



8052P programmable version with additional user features



Technical Specifications

Output

Operating modes.....	Constant voltage or constant current with automatic crossover.
Voltage range.....	0 to 35 V.
Current range.....	0 to 10 A.
Over-voltage protection.....	10 % to 110 % of max. output voltage.
Setting resolution.....	10 mV, 10 mA.
Load regulation.....	<0.01 % of max. O/P for 90 % change.
Line regulation.....	<0.01 % of max. O/P for 10 % change.
Output impedance.....	<1 mOhm in constant voltage mode. >5 kOhm in constant current mode.
Ripple & noise.....	<1 mV RMS typical in constant voltage. <3 mA RMS typical in constant current.
HF common mode noise.....	Typically <3 mV RMS, <10 mV pk.
Transient load response.....	<20 us to within 50 mV of set level for 90 % load change.
Temperature coefficient.....	typically <100 ppm/degC.
Overvoltage protection delay.....	<200 us.
Protection functions.....	Overvoltage trip, Regulator overtemperature, Sense mis-wiring.
Status indication.....	Output On lamp, Constant voltage mode lamp, Constant current mode lamp, Trip message on display.
Output terminals.....	4 mm output terminals
Output protection.....	Full forward and reverse protection via OVP and diode clamp.

Meter Specifications

Meter types.....	Separate 4 digit meters for voltage and current with 12.5 mm (0.5 ") LED displays.
Meter resolutions.....	10 mV, 10 mA.
Meter accuracies.....	Voltage $\pm(0.2\% + 1 \text{ digit})$ / Current $\pm(0.5\% + 1 \text{ digit})$.

8052 Front Panel Controls

Voltage setting.....	Via single rotary controls for coarse and fine control.
Current setting.....	Via single turn semi-logarithmic rotary control.
Overvoltage setting.....	Via screwdriver adjustable preset potentiometer.
Output On/Off.....	Latching push-push switch operating electronic power control.

8052P Front Panel Controls

Voltage setting.....	Direct keyboard entry or quasi-analogue rotary control.
Current setting.....	Direct keyboard entry or quasi-analogue rotary control.
Overvoltage setting.....	Direct keyboard entry.
Output On/Off.....	Push button control with indicator lamp operating electronic power control.

Note: all voltage & current levels set via the keyboard are displayed on a separate 0.3 " 4 digit display. This entry preview system ensures that the user can observe the value entered before it is effected thus avoiding possible error. The display is also used for setting additional functions & for displaying watts.

Additional keyboard functions: Increase or decrease voltage or current in user-selectable steps (delta mode). Store/recall voltage, current & OVP levels from non-volatile memory (25 memories). Set digital interface type (RS232 or GPIB), set baud rate, set address.

8052P Digital Interface

R-S232.....	Variable baud rate, 9600 baud maximum, 9 pin D connector (male).
Bus Functions.....	Set voltage; set current; set OVP; set output On/Off; read output voltage/current.
Setting resolution.....	Voltage - 10 mV; Current - 10 mA.
Setting accuracy.....	Voltage - $\pm(0.1\% + 10 \text{ mV})$; Current - $\pm(0.2\% + 20 \text{ mA})$.
Response times.....	Interface - <15 ms (single command); PSU - Depends on Load conditions, typically 150 ms to within 0.1 % of final value.
Readback resolution.....	Voltage - 10 mV; Current - 10 mA.
Readback accuracy.....	Voltage - $\pm(0.1\% + 1 \text{ digit})$; Current - $\pm(0.5\% + 1 \text{ digit})$.

General Specifications

Power Requirements.....	230 V or 115 V (600 VA max). Installation category II. Power is dependant on the line power to the CalBench.
Safety.....	Complies with EN61010-1. EMC: Complies with EN61326.
Temperature.....	+5 °C to +40 °C operating, 20 % to 80 % RH. -40 °C to +70 °C storage.
Cooling.....	Silent fan-less convection cooling.
Module widths.....	8052 and 8052P: 295 mm (Both modules can only be fitted in the CalBench primary console)

Ordering Information

8052.....	Adjustable DC Power Supply Module 35 V DC 10 A
8052P.....	Programmable Adjustable DC Power Supply Module 35 V DC 10 A

Due to continuous development Time Electronics reserves the right to change specifications without prior notice.