

Electron S.R.L.

Design
Production &
Trading of
Educational
Equipment

B12 – DEDICATED INSTRUMENTS AND POWER SUPPLIES



B1255 – POWER SUPPLY WITH SIGNAL GENERATOR



General:

This power supply is implemented in a desktop cabinet enclosure. The unit has stabilized DC power outputs and a useful general purpose signal generator.

The power supply has the following characteristics:

- Stabilized +5 output
- Stabilized +15, -15V outputs
- Max nominal current of 500mA on each output
- Max overload current of 900mA on each output
- Overload current limitation: approx. 900mA
- Foldback short-circuit current limiting (approx. 200mA I_{CC})
- Output ripple: better than 50mV RMS

Characteristics of the signal generator:

- Frequency range: 1Hz-100KHz, in 2-course ranges settable – 1-300Hz and 0,3KHz-100KHz
- Fine frequency adjustment
- Selectable output waveforms: sine, square (TTL), triangle, open collector square wave
- Continuously variable sine and triangle output amplitude, 0-20Vpp
- Duty cycle variable for the square wave 0-100%

The B1255 operates from the AC mains: 110 to 250V, 50-60Hz (please specify while ordering).

Ordering code:

B1255

B1260 – AUDIO POWER METER



General:

The B1260 Audio Power Meter is a versatile desk-top instrument designed to measure the power delivered from an audio power amplifier to a standard 4Ω or 8Ω output load (selectable).

It is constructed in a robust cabinet, which has the input connectors, power level selectors as well as a clear digital display on the front panel.

The unit measures a True RMS value for powers upto a maximum of 200W (199.9) on the output load in three selectable ranges.

These are as follows:

- 0 – 2W (1.999)
- 2 – 20W (19.99)
- 20 – 200W (199.9)

The input of the instrument is internally protected against overload, and is completely floating with respect to the load.

The B1260 operates in a frequency range of 20Hz to 50KHz, and has an accuracy of 0,5dB within this range.

The Audio Power Meter requires an AC mains supply of either 120V or 220V, 50 – 60Hz (please specify when ordering).

The unit comes complete with an input connector, which has crocodile clips for easy connection to the load and an instruction manual.

Ordering code:

B1260

B12-AM – ANALOG MULTIMETER

B12-AM is a multifunction analog multimeter, suitable to electric and electronic laboratories. The instrument is fuse protected and is supplied complete of two test leads, temperature probe and Instruction Manual.

Features:

- DC Voltage: 0-0.25V/2.5V/25V/250V/600V
- AC Voltage: 0-0.25V/2.5V/25V/250V/600V
- DC Current: 0-25 μ A /25mA/250mA/10A
- AC Current: 0-25 μ A /25mA/250mA/10A
- Resistance: 0-200 Ω /2k Ω /20k Ω /200k Ω /2M Ω /20M Ω
- Capacitance: 0+2nF/20nF/200nF/2 μ F /20 μ F
- Frequency measurement:0-20KHz
- Temperature measurement: -40°C to 150°C
- Power source: 9V IEC 6F22 battery



B12-AO – 20MHZ DUAL TRACE OSCILLOSCOPE

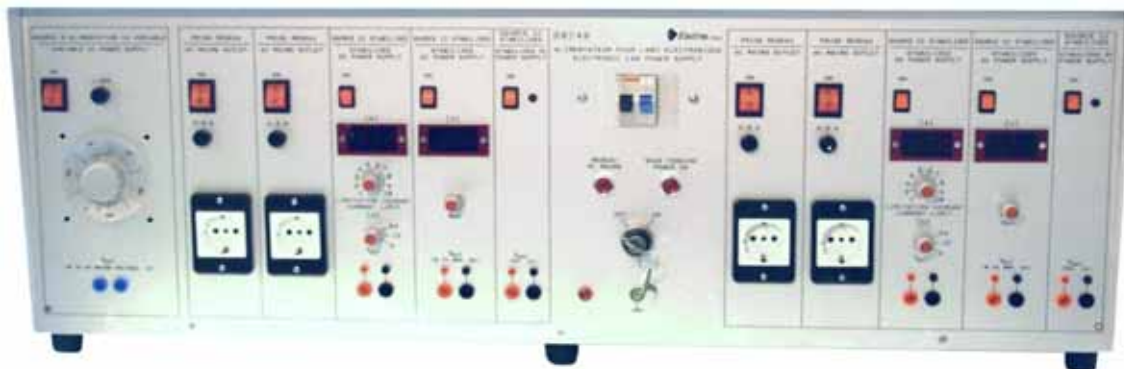


This 20 MHz oscilloscope, complete of two probes, is ideal for educational use.

- Display: Dual-channel display, rectangular screen with internal graduation
- Bandwidth: DC-20MHz-3dB
- Vertical Deflection: 5mV/div to 5V/div
- Rise Time: $\leq 17\text{ns}$

- Vertical Operating Modes: CH1,CH2,ALT,CHOP,ADD
- Horizontal deflection: $0.2\mu\text{s}/\text{div}$ to $0.2\text{s}/\text{div}$
- Trigger Modes: Auto, Norm, TV-H, TV-V
- Trigger Source: INT,EXT,LINE
- X-Y Mode

B12-B0240 POWER SUPPLY FOR ELECTRONICS LABORATORY



This unit is designed to be equipped to Laboratory desks in order to provide safe and handy voltage supply sources. The unit consists of a metallic case of approx 350 x 390 x 1000 mm size (H x D x W) with clear silkprinting indication of controls, output voltages and ratings.

The module includes:

- magneto-thermic differential AC mains breaker, with lamp "ON" indication and emergency "OFF" button
- 4 AC mains output socket, SHUKO standard, 6A each
- 1 adjustable AC output source 0-220 V (or 240 V depending on local AC mains voltage), current rating 1 A, fuse-protected
- 2 stabilized DC sources 0-30 V, separately variables and independent,

in such a manner that they can be connected in series to make a 0-60 V source or a dual source 0 to +/- 30 V. Current rating is 2 A on each output, short-circuit proof.

- 2 stabilized DC sources at selectable and fixed voltages 6, 12, 24 V, with adjustable current limiting 0.5 to 10A.
- 2 stabilized DC sources at 5 V, with short-circuit protection at 1 A.

Technical characteristics of DC stabilizers (all types)

- output ripple at rated load: better than 50 mV rms
- voltage change from 10% load to 90% load: better than 1.5%

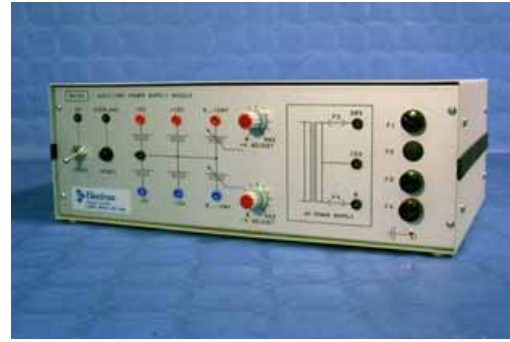
ORDERING CODE

B0240

B12-B4191 – POWER SUPPLY

This power supply is implemented in a desk-top cabinet enclosure and has the following characteristics:

- Stabilized +5, -5V outputs
- Stabilized +15, -15V outputs
- Stabilized 2 to +20V output
- Stabilized 2 to -20V output
- Max nominal current of 500mA on each output
- Max overload current of 900mA on each output
- Overload current limitation: approx. 900mA
- Foldback short-circuit current limiting (approx. 200mA I_{CC})
- Output ripple: better than 50mV RMS



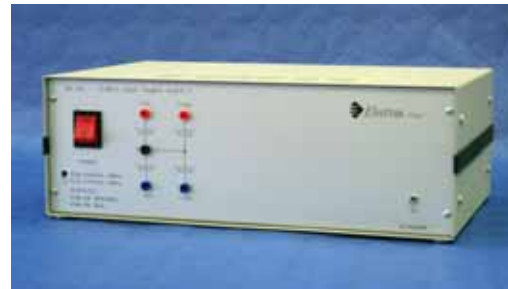
- AC outputs 0-15-30V (fuse protected 2A)

The power supply operates from the AC mains: 110 to 250V, 50-60Hz (please specify while ordering).

B12-B4192 – POWER SUPPLY

This power supply is implemented in a desk-top cabinet enclosure, and has the following characteristics:

- Stabilized +5, -5 +15, -15V outputs
- Max nominal current of 500mA on each output
- Max overload current of 900mA on each output
- Overload current limitation: approx. 900mA
- Foldback short-circuit current limiting (approx. 200mA I_{CC})



- Output ripple: better than 50mV RMS

The B4192 operates from the AC mains: 110 to 250V, 50-60Hz (please specify while ordering).

B12-B4192-B – POWER SUPPLY



General

This is a simple and compact power supply in a plastic case of reduced size. It is adopted whenever it is desirable to provide each trainer of the series B40, B41, B42, B43, etc of its independent power supply source.

The B4192-B has indeed the capability to power supply a single trainer at the time of the said series.

Technical characteristics:

- AC input 220 to 240VAC, 50 to 60Hz
- Outputs: +15V/-15V stabilized and protected. Max continuous rating: 200mA from each source, 0.5A peak
- Foldback current limitation to approx. 200mA
- Size (approx): 160 x 100 x 70 mm

B12-B4192-C – POWER SUPPLY



General

This power supply is implemented in a desktop cabinet enclosure and has the following characteristics:

- Variable DC output 0 to 30V, stabilized and protected
- Adjustable output current limitation 0 to 3A
- Digital V and A meters

Technical characteristics:

- Load regulation: 3%
- AC ripple voltage: 1 mV RMS
- Voltage and current meters
- operation from AC mains 220-240V, 50-60 Hz

B4192-D – POWER SUPPLY

This is a simple and compact power supply in a plastic case of reduced size.

- AC input 220 to 240V_{AC}, 50 to 60Hz
- Output: +12V, 700mA stabilized and protected



B12-B4196 – POWER SUPPLY

This power supply is implemented in a desktop cabinet enclosure and differs from the B4191 in the fact that it provides 3-phase low voltage supplies. Twin secondary windings are present, having all the output terminals accessible. This allows the possibility of both STAR and DELTA set-ups, as well as series connections of the appropriate pair of windings.

The power supply has the following characteristics:

- Stabilized +5, -5V outputs
- Stabilized +15, -15V outputs
- Stabilized +2 to +20V output
- Stabilized -2 to -20V output
- Max nominal current of 500mA on each output
- Max overload current of 900mA on each output



- Overload current limitation: approx. 900mA
- Foldback short-circuit current limiting (approx. 200mA I_{CC})
- Output ripple: better than 50mV RMS
- 3-phase, AC outputs – 0-12V, 0-12V on each phase (fuse protected 1A)

The power supply operates from a 3-phase AC mains supply: 220 to 415V, 50-60Hz (please specify while ordering).

B12-B4194 – POWER SUPPLY WITH SIGNAL GENERATOR

This power supply is implemented in a desktop cabinet enclosure. The unit has stabilized DC power outputs and a useful general purpose signal generator.

The power supply has the following characteristics:

- Stabilized +5 output
- Stabilized +15, -15V outputs
- Max nominal current of 500mA on each output
- Max overload current of 900mA on each output
- Overload current limitation: approx. 900mA
- Foldback short-circuit current limiting (approx. 200mA I_{CC})
- Output ripple: better than 50mV RMS



- Fine frequency adjustment
- Selectable output waveforms: sine, square (TTL), triangle, open collector square wave
- Continuously variable sine and triangle output amplitude, 0-20Vpp
- Duty cycle variable for the square wave 0-100%

Characteristics of the signal generator:

- Frequency range: 1Hz-100KHz, in 2-course ranges settable – 1-300Hz and 0,3KHz-100KHz

The B4194 operates from the AC mains: 110 to 250V, 50-60Hz (please specify while ordering).

B12-B4198A and B12-B4198B – POWER SUPPLIES



Photo of B12-B4198B

This unit is a desk-top power supply for general use within the laboratory.

Two versions are available:

B4198-A: DC output 0 to 48V continuously variable, 10A

B4198-B: DC output variable in steps of 2, 4, 6, 12, 28, 48V, 10A, with fine adjustment potentiometer

Other common technical characteristics:

- AC mains input: 220-240V, single-phase, 50-60Hz

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- Key-lockable mains to prevent unauthorized use
- Current rating 10A, with adjustable current limit in the range of 1 to 10A
- Switch mode operation, with galvanic insulation between the output and the AC mains
- Thermal overload protection and output fuse (12A) protection
- Digital V-meter and A-meter indication

Ordering Codes

B4198-A

B4198-B

B12-BTP2- POWER SUPPLY



This unit is designed to be mounted on a two-student work desk, to provide safe and handy voltage sources for the experimental work

The unit consists of a metallic case of approx. 1000 x 360 x 320mm (W x D x H), with clear silk-screen printed indication of the controls, outputs, voltages and ratings.

Technical characteristics:

- Magneto-thermal residual-current circuit breaker for the AC mains, with light indicators and a key-lockable switch to prevent unauthorized use.
- 1 variable AC supply, rated at 0 to 250V AC, 1A (Fuse protected)
- 1 variable AC supply, rated at 0 to 24V AC, 5A (Fuse protected)
- 4 AC mains output sockets, SHUKO standard, 6A each. The mains outlets are provided with an illuminated ON/OFF switch.
- 1 variable stabilized DC source 1.2 to 30V DC approx, with variable current limitation in the range of 0 to 2A approx.
- The unit is provided with a 3-digit digital Voltmeter with high visibility displays
- DC output sources at the fixed voltages of +12, -12 DC with electronic current limitation at 0.5A.
- 1 stabilized DC source at 5V DC, with electronic short-circuit protection at 2A.

ORDERING CODE

BTP2

B12-DO – DIGITAL STORAGE OSCILLOSCOPE



B12-DO is a versatile 60 MHz digital storage oscilloscope featuring a Color LCD display of high resolution and high contrast with adjustable back light.

Main technical characteristics

- Bandwidth: 60MHz;
- Record length of 6,000 points for each channel;
- Sampling rates of 250MS/s for each channel;
- Cursor readout;
- Five automatic measurement functions;
- Color liquid crystal display of high resolution and high contrast with adjustable back light;
- Storage and call-out of waveforms;
- Automatic setting function provided capable of fast setting;
- Multiple-waveform calculation function;
- Detecting of the average and peak values of the waveform;
- Digital real-time oscilloscope;
- Edge and video triggering function;
- RS232 or USB communication ports;
- Different continuous displaying time;

B12-FC – FREQUENCY METER



It is a 10 Hz to 1GHz multiple-function instrument (frequency, period, totalize). This is performed thanks to a single chip microcontroller.

B12-FC features a eight digit, bright seven segment LED display. Low power consumption circuit design, small size, light weight, high stabilized crystal oven oscillator for measurement of high accuracy are the most important features.

Technical Characteristics

CHANNEL A

Range :10Hz to 100MHz
Resolutions :1,10,100, 1000Hz, switch selectable.

Gate time :0.01s, 0.1s, 1s switch selectable.
Impedance :1M Ω

CHANNEL B

Range :100MHz to 1GHz
Resolutions :100Hz, 1KHz, 10KHz, switch selectable.
Gate time :0.01s, 0.1s, 1s switch selectable.
Impedance :50 Ω

Attenuation : x1, x20
Display : 8 digits with decimal point, gate, overflow, KHz, MHz and μ s indication.

B12-GRG450B – RF GENERATOR



Technical characteristics:

- Frequency: 100kHz to 150MHz in 7 ranges (up to 450 MHz on harmonics).
- Accuracy $\pm 5\%$
- Level 100mV approx up to 35MHz
- High/Low and fine level control
- Internal AM at 1 kHz, level adjustable up to 30%
- External AM input (50Hz to 20 kHz)
- Auxiliary Audio Output (1 kHz)
- Frequency monitor
- Power source 100/120/230 $\pm 10\%$, 50/60Hz
- Dimensions 247 x 158 x 140mm
- Weight 2.5kg approx.

B12-MM1 – DIGITAL MULTIMETER



- Auto range
- Data hold
- LCD Display with bargraph allowing analog measurements
- DC Voltage: 326mV, 3.26/32.6/326/1000V
- AC Voltage: 3.26/32.6/326/700V
- DC Current: 0.326/3.26/32.6/326mA, 10A
- AC Current: 0.326/3.26/32.6/326mA, 10A
- Resistance: 326/3.26K/32.6K/326K/3.26M/32.6MΩ
- Capacitance: 326n/32.6μF
- Continuity checking with buzzer
- Transistor hFE Test
- Power: 6F22(9V) X 1

B12-SY815 – TOOL BAG FOR ELECTRONICS



Including the following tools:

- 1/4" Flat screwdriver
- #2 Phillips screwdriver
- 3/16" Flat screwdriver
- #1 Phillips screwdriver
- 1/8" Flat screwdriver
- #0 Phillips screwdriver
- Reversible T10/T15 torque driver
- 3/16" nut driver
- 1/4" nut driver
- Solder Reel
- Soldering Iron 25W/120V or 25W/240V
- Solder Sucker
- Heat sink
- Spare parts tube
- Tweezers
- Three Claw Parts retriever/extractor
- Reverse action tweezers
- IC inserter (14-16 pins ICs)
- IC extractor
- 5" needle nose pliers with cutting rdge
- 6" adjustable wrench
- 8" wire cutter
- Black vinyl zipper case

B12-WG – WAVEFORM GENERATOR WITH FREQUENCY METER



This versatile instrument combines the functions of a complete waveform generator and a useful frequency meter.

Technical specifications:

- Output frequency: 0.1Hz to 10MHz
- Output amplitude: 10Vp-p (50Ω time), 20Vp-p (1M Ω time)
- Output Waveforms: Sine wave, Square wave, Triangle wave
- Symmetric Range: 20 % to 80 % or 50%
- Rise / Fall Time: 25ns
- Sine wave distortion: $\leq 1\%$
- Sweep Mode: Linear , Logarithm , extern sweep
- Output Attenuation: 0dB / 20dB / 40dB
- TTL/CMOS synchronization signal output: 5V to 15V
- Frequency Measure Range: 0.1Hz to 50MHz