## **Benchtop Oscilloscope**



These oscilloscopes are rugged, easy to operate, and highly reliable. They are ideal for research, production, and electronics applications. The BOS converts a high-input differential voltage ( $\leq$ 1300 Vp) into a low voltage ( $\leq$ 6.5V).

Optional accessories include differential voltage probes, which provide a safe means of measuring a floating potential.

OMEGACARE<sup>™</sup> extended warranty program is available for models shown on this page. Ask your sales respresentative for full details when placing an order. OMEGACARE<sup>™</sup> covers parts, labor and equivalent loaners.

 $\mathbf{O}$ 

Program

OMEG

| To Order  |                            |  |  |  |
|-----------|----------------------------|--|--|--|
| Model No. | Description                |  |  |  |
| BOS-200   | 20 MHz analog oscilloscope |  |  |  |
| BOS-205   | 20 MHz with delay sweep    |  |  |  |
| BOS-350   | 40 MHz analog oscilloscope |  |  |  |
| BOS-355   | 40 MHz with delay sweep    |  |  |  |
| BOS-605   | 60 MHz with delay sweep    |  |  |  |

| Accessories |   |
|-------------|---|
| Model No.   | Description   |
| BOSP-260    | Replacement oscilloscope probe for 60 MHz bandwidth x1, x10     |
| BOSP-9100   | Replacement oscilloscope probe for<br>100 MHz bandwidth x1, x10 |

Comes complete with power cord, 110V fuse, 220V fuse, plastic screwdriver, 2 probes. **Ordering Examples: BOS-200**, 20 MHz analog oscilloscope.

OCW-3, OMEGACARE<sup>™</sup> extends standard 1-year warranty to a total of 4 years.



- ✓ 20 to 60 MHz Dual Trace, ALT Trigger
- Vertical Sensitivity: 1 mV/DIV
- Horizontal Resolution: 10 nS
- Hold-Off, X-Y Operation, Z-Mod, Y-Output

## 23 Calibrated Ranges, Main Time Base

The BOS Series comprises dual-channel oscilloscopes with frequency bandwidths of 40 to 100 MHz at -3 dB, a maximum sweep of 10 ns, a maximum sensitivity of 1 mV/DIV, and 150 mm rectangular CRT with internal graticule.

## Specifications

| •                      |  |   |  |  |   |  |  |  |
|------------------------|--|---|--|--|---|--|--|--|
| Models                 | BOS-200  | BOS-205   | BOS-350                                | BOS-355  | BOS-605   |  |  |  |
| Cathode Ray Tube       | 6" diagonal, rectangular screen with internal graticule 8 x 10 DIV (1 DIV = 1 cm),<br>B31 phosphor, 2 kV acceleration voltage<br>(1 DIV = 1 cm), B31 phosphor<br>12 kV accel voltage |   |  |  |   |  |  |  |
| Vertical Deflection    |  |   |  |  | -   |  |  |  |
| Bandwidth              | DC to 20 MH  | Hz (-3 dB)  | DC to 4                                | 0 MHz (-3 dB)  | DC to 60 MHz (-3 dB)  |  |  |  |
| Sensitivity            | x5 gain se   | 1 mV/DIV to 1 V/DIV (5 MHz, -3 dB),<br>x5 gain selected<br>5 mV/DIV to 5 V/DIV                          |  | //DIV (10 MHz, -3 dB),<br>in selected<br>DIV to 5 V/DIV  | 1 mV/DIV to 1 V/DIV<br>(15 MHz, -3 dB), x5 gain selected<br>5 mV/DIV to 5 V/DIV |  |  |  |
| Attenuator             |  | 1-2-5 seque   | nce, 10 step with                      | variable control   | •   |  |  |  |
| Input Impedance        |  |   | IΩ ±2%, 25 pF ±                        |  |   |  |  |  |
| Max Input Voltage      |  |   | 0 V (DC + AC pe                        |  |   |  |  |  |
| Rise Time              | About 17   | About 17.5 ns About 8.8 ns About 5.8 ns   |  |  |   |  |  |  |
| Overshoot              |  |   | Less than 5%                           |  | •   |  |  |  |
| Operation Mode         |  | CH 1, (   | CH2, DUAL (ALT                         | , CHOP)  |   |  |  |  |
| Algebraic Addition     |  | CH  | 1 + CH 2, CH 1 -                       | CH 2   |   |  |  |  |
| Inverter               |  | CH 2 Only   |  |  |   |  |  |  |
| Horizontal Deflection  |  |   |  |  |   |  |  |  |
| X-Y Mode               |  | Switch slectable using X  | -Y switch; CH 1:                       | X axis, CH 2: Y axis   |   |  |  |  |
| Accuracy               |  |   | xis: ±6%, Y Axis:                      |  |   |  |  |  |
| Bandwidth              |  |   | C to 1 MHz (-3 c                       |  |   |  |  |  |
| X-Y Phase Difference   |  | Appro   | ox. 3 degrees at                       | 50 kHz   |   |  |  |  |
| Sweep System           |  |   |  |  |   |  |  |  |
| Sweep Display Mode     | Main, Mix  | Main, Mix, Delay  | Main, Mix                              | Main, Mix, Delay   | Main, Mix, Delay  |  |  |  |
| Hold-Off Time          | 5:1 continuously variable  |   |  |  |   |  |  |  |
| Main Sweep             |  |   |  |  |   |  |  |  |
| Sweep Speed            | 0.1 µs/DIV to 2.0 s/DIV in 1-2-5 sequence, 23 steps  |   |  |  |   |  |  |  |
| Accuracy               | ±3%  |   |  |  |   |  |  |  |
| Variable Time Control  | 5:1, uncalibrated, continuously variable between steps   |   |  |  |   |  |  |  |
| Sweep Magnification    | 10x, ±10%, extended sweep speed up to 10 ns/DIV  |   |  |  |   |  |  |  |
| Delay Sweep            |  |   |  |  |   |  |  |  |
| Sweep Speed            | 0.1 µs/DIV to 2.0 s/DIV in   | 0.1 µs/DIV to 2.0 s/DIV in 1-2-5 sequence, 23 steps 0.1 µs/DIV to 2.0 s/DIV in 1-2-5 sequence, 23 steps |  |  |   |  |  |  |
| Accuracy               | ±3°  | %   |  | ±3%  |   |  |  |  |
| Sweep Magnification    | 10x, ±10%, extended swe  | ep speed up to 10 ns/DIV  |  | 10x, ± 10%, extended sweep speed up to 10 ns/DIV   |   |  |  |  |
| Delay Timeposition     | Variable control to<br>waveform for  | locate desirable<br>extending   |  | Variable control to locate desirable<br>waveform for extending                                       |   |  |  |  |
| Triggering             |  |   |  |  |   |  |  |  |
| Trigger Coupling       | AUTO, NORM   |   |  | AUTO, NORM TV-V, TV-H  |   |  |  |  |
| Trigger Source         | CH 1, CH 2, AL   | I, LINE, EXI  |  | CH 1, CH 2, ALT, LINE, EXT   |   |  |  |  |
| Slope                  | ± ±  |   |  |  |   |  |  |  |
| Trigger Sensitivity    |  |   |  |  |   |  |  |  |
| Coupling               | TV-V, TV-H, Auto, Nom  |   |  |  |   |  |  |  |
| Bandwidth<br>Interior  | DC to 1 kHz, 1 kHz to 100 kHz , 100 Hz to 20 MHz, 100 Hz to 20 MHz   |   |  |  |   |  |  |  |
| Exterior               |  | 1.0 DIV, 1.5 DIV, 1.0 DIV, 0.5 Vp-p<br>0.5 Vp-p   |  |  |   |  |  |  |
| Dimensions             |  | 0.5 vp-р<br>324 W x 398 D x 132 mm H (12.75 x 15.67 x 5.20")  |  |  |   |  |  |  |
| Net Weight             | Approx. 7.6 kg (16.75 lb)  |   |  |  |   |  |  |  |
| Rated Range of Use     |  | 10 to 35°C (50 to 95°F), 10 to 80% RH   |  |  |   |  |  |  |
| Component Test         |  |   |  |  |   |  |  |  |
| Test Voltag            | Max 6 Vrms (   | (open circuit)  | pen circuit) Max 6 Vrms (open circuit) |  | Vrms (open circuit)   |  |  |  |
| Test Current           | Max 11 mA  | <b>,</b>  |  | Max 6 vinis (open circuit)<br>Max 11 mA (shorted)  |   |  |  |  |
| Test Frequency         | Line frequency   |   |  | Line frequency   |   |  |  |  |
| Components             |  | de, transistor, zener, etc.   |  | Capacitor, inductor, diode, transistor, zener, etc.  |   |  |  |  |
| CH 2 Output            |  | ,   | I                                      |  |   |  |  |  |
| Output level           | 100 mV (no load), 50 m   | N/DIV (with 50 Ω load)  |  | 100 mV (no load)   | , 50 mV/DIV (with 50 $\Omega$ load)   |  |  |  |
| Bandwidth              | 20 Hz to   |   | 20 H                                   | z to 40 MHz  | 20 Hz to 60 MHz   |  |  |  |
| Graticule Illumination |  |   | ,,,,                                   |  | Adjustable  |  |  |  |
| Calibrator             | Square wave about  |   |  | Square wave  | about 1 kHz, 2V p-p ±3%   |  |  |  |
| Z-Modulation           | Positive TTL signal, low-lo  | evel blank intensity at any unblank any intensity   |  | Positive TTL signal, low-level blank intensity at any intensity,<br>high-level unblank any intensity |   |  |  |  |
| Trace Rotation         | Adjustable of  |   | Adjustable on front panel              |  |   |  |  |  |
| Power Source           |  | 110 to 130V (800 mA fuse), 200 to 260V (600 mA fuse) 50/60 Hz selectable                                |  |  |   |  |  |  |
| Power Consumption      |  | Approx. 38 W  |  |  |   |  |  |  |
| Limits of Operation    | 0 to 50°C (32 to 122°F), 10 to 80% RH  |   |  |  |   |  |  |  |
| Storage Environment    | -30 to 70°C (-22 to 158°F), 10 to 90% RH   |   |  |  |   |  |  |  |
|                        |  |   |  |  |   |  |  |  |