

12. Product Standards and Specifications

OSCILLOSCOPE

| MODEL | 820 | 840 | 860 | 800X | 800Z |
|----------------------------------|--|--|-------|--|--------|
| | 20MHZ | 40MHZ | 60MHZ | 100MHZ | 200MHZ |
| BANDWIDTH/ SAMPLERATE | Real Sampling 100MS/s Per Channel 200MS/s Single Channel | Real Sampling 100MS/s per Channel, 200 MS/s Single Channl with 2.5 GS/s Repetive Samling | | Real Sampling 500MS/s per Channel, 1 GS/s Single Channl with 5 GS/s Repetive Samling | |

INPUT

| | |
|-------------------|--|
| Input Channels | 2 Channels |
| Input Coupling | DC, AC, GND |
| Input Impedance | 1M Ω \pm 1%, 20pF \pm 3pF |
| Probe Attenuation | x1 or x10 |
| Max Input | 300V(direct input) 600V(through 10:1 Probe) |

VERTICAL

| | |
|---------------------|--------------------------------|
| Vertical Resolution | 8-Bit |
| VOLTS/DIV Range | 5 mV/div~100 V/div(1,2,5 Step) |
| Offset(Position) | \pm 5 div from center |
| Vertical Accuracy | \pm 3% |

HORIZONTAL

| MODEL | 820 | 840 | 860 | 800X | 800Z |
|-------------------------|---|-------------------|-----|--------------------|------|
| SEC/DIV Range | 50 ns/div~50 s/div | 10ns/div~50 s/div | | 50 ns/div~50 s/div | |
| Time Base Accuracy | \pm 0.01% | | | | |
| Position Range | pre-Trigger : 20div max. Post-Trigger : 1000div | | | | |
| Delay Resolution | 1/250 of screen diameter | | | | |
| Delay Accuracy | 0.04 divisions | | | | |
| Delta Time | \pm 3% | | | | |
| Measurement Accuracy | | | | | |
| Modes | Main, XY | | | | |
| XY | Yes | | | | |
| Horizontal Pan and Zoom | Yes | | | | |

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| TRIGGER | |
|---------------------|---|
| Sources | ChannlA and B |
| Modes | Auto, Normal, Single |
| Advanced Selections | Edge, Pulse, Pattern, Video |
| Edge | Trigger on arising or Falling edge of any source |
| Pulsewidth | Trigger on apositive or negative pulsewidth of any source larger than, less than, equal to or not equal th duration width 200 nS ~ 10S |
| TV | 625/PAL, SECAM, 525/NTSC, Source CHA, CHB, Even field, Odd field, Line #select |
| TV Sensitivity | 0.7 div trigger Level |
| Auto Scale | Yes |
| Range | ± 10 div from center of screen |
| Level Accuracy | ± 0.4 divisions |
| Level Resolutions | 500 pixels |
| Sensitivity | DC 5MHz - 0.5div 1.5 divisions |
| Noise Rejections | Yes |
| Coupling Modes | DC: DC Coupled trigger AC:AC Coupled trigger cutoff frequency < 1HZ HF-Reject:>50KHz LF-Reject:>30KHz Noise Reject:3times the DC coupled limits |

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| ACQUISITION | | | | | |
|------------------------|--|-----|-----|-----------------------|------|
| MODEL | 820 | 840 | 860 | 800X | 800Z |
| Real-Time | 200MS/s single channel, | | | 1 GS/s Single Channl, | |
| Sample Rate | 100MS/s per channel | | | 500MS/s per Channel | |
| Waveform Interpolation | Dot, Linear, Sine, Pulse | | | | |
| Record Length | 125 Kbytes/channel | | | 10 Kbytes/channel | |
| Acquisition Mode | Sample, Peak Detect, Envelope, Average | | | | |
| Peak Detection | 10ns | | | | |
| Average | 2-256 | | | | |
| Vertical Resolution | 8bit | | | | |
| Same Rate Accuracy | 100ppm | | | | |
| Minimum Sample Rate | 100MS/s(250 ns to 50S/div) | | | | |

| MEASUREMENT | |
|-----------------------|--|
| Automatic Measurement | Frequency Period, Mean, Cycle Mean, RMS, Peak-to-Peak, Max, Min, Amplitude, Top, Base, + Width, - Width, Rise time, Fall Time, +Duty, -Duty, Phase, +Overshout, -Overshout, Preshoot |
| Waveform Math | CH A+CH B, CH A-CH B, CH B -CH A |
| Cursors | Delta V Voltage |
| Delta V | Voltage diff Between cursors |
| Delta T | Time difference between cursors |
| FFT | Model 840/860/800X/800Z |
| Windows | Rectangular, Hamming, Hanning, Blackman- Harris |
| Amplitude Display | Variable dB(1/2/5/10/20dB) |
| Maximum Frequency | 1.25 GHz |

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| FUNCTIONS | |
|-------------|--|
| Save/Recall | 10Waveforms, 10 Settings |
| Zoom | Direct Time/Volt conversion |
| XY Mode | X Axis Channel Input - YAxis Channel Input |

MULTIMETER

| | |
|---------------|---|
| COUNTS | Autoranging 6000 Count, 35/6 digit with analog Bargraph display |
|---------------|---|

| DC VOLTAGE | |
|---------------------|--|
| Range | 600mV-1000V |
| Accuracy | $\pm(0.3\%+10\text{digit})$ |
| Input Impedance | 10Mohm |
| Overload Protection | 1,000v DC or AC Peak within 10 Seconds |

| AC VOLTAGE(True RMS) | |
|----------------------|---|
| Range | 6V-600Vat 30KHz, True RMS |
| Accuracy | $\pm(0.75\%+10\text{digit})$ at 50-1KHz $\pm(2.0\%+10\text{digit})$ at 1-30KHz |
| Overload Protection | 1,000V DC or AC Peak within 10 Seconds |

| RESISTANCE | |
|---------------------|---|
| Range | 600 ohm - 60M ohm |
| Accuracy | 600 ohm-6M ohm $\pm(0.5\%+10\text{digit})$ 60 Mohm $\pm(1.0\%+10\text{digit})$ |
| Overload Protection | 250V DC or AC Peak within 10 Seconds. |

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| CAPACITANCE | |
|-------------|------------------------------|
| Range | 60nF - 300uF |
| Accuracy | $\pm(2.0\%+10\text{digits})$ |

| OTHER MEASUREMENTS | |
|--|--|
| Diode Check | Accuracy:2% |
| Continuity | less than 30 ohm, Buzzer Sound |
| MIN/MAX/AVG | Records Minimum, Average and Maximum readings with Time Stamping |
| Temperature, % Relative Humidity, High-Current, Pressure | Through external adapter (accuracy: mV accuracy of 800series+Adapter accuracy) |

| DISPLAY | |
|------------------|---|
| Display Device | 3.8", 320 × 240 Color LCD |
| Display Contrast | Adjustable |
| Persistence Mode | Channel and Math function are displayed dimmer for previous Acquisition |

| | |
|------------------|-------------------------|
| OPERATION | 1 encoder switch, 18Key |
|------------------|-------------------------|