

CA9020DF/CA9040DF/CA9060DF DUAL CHANNEL OSCILLOSCOPE



CA9020DF

Features:

- 20MHz/40MHz/60MHz dual channel series
- High luminance, internal graticule CRT
- X10 sweep magnification
- ALT triggering function
- Electronic rotary encoder switch
- LED display for VOLT/DIV and TIME/DIV
- Built-in 6 digit frequency counter
- TV synchronizing, X-Y mode operation
- 1mV/DIV high sensitivity
- Triggering level lock function, automatic synchronizing function
- Z-Axis input
- CH1 output
- Low cost and economical

Specifications

| | | CA9020DF | CA9040DF | CA9060DF |
|----------------------------|---|---|----------------------|---------------------|
| CRT | Type | 6" rectangle, internal graticule, 0%, 10% 90% and 100% marks | | |
| | Display Area | 8 x 10DIV (1DIV=10mm) | | |
| VERTICAL SYSTEM | Accelerating Voltage | 2kV | 12kV | 12kV |
| | Intensity and Focusing | Continuously adjustable at front panel | | |
| | Trace Rotation | Adjustable at front panel | | |
| | Sensitivity and Accuracy | 1mV/DIV ~ 5V/DIV +/-3% (X5MAG: +/-5%), 12 calibrated steps in 1-2-5 sequence | | |
| | Vernier Vertical Sensitivity | Continuously variable to 1/2.5 or less than panel indicate value | | |
| | Band Width(-3dB) | DC ~ 20MHz | DC ~ 40MHz | DC ~ 60MHz |
| | AC Coupling | Low limit frequency 10Hz (with reference to 100kHz, 8DIV, frequency response with -3dB) | | |
| | Rise Time | Approx. 17.5ns | | |
| | Input Impedance | Approx. 1M Ω /25pF | Approx. 8.75ns | Approx. 5.83ns |
| | DC Balance Shift | 5mV ~ 5V/DIV: +/-0.5DIV; 1mV ~ 2mV/DIV: +/-2.0DIV | | |
| Linearity | < 0.1 DIV of amplitude change when waveform of 2DIV at graticule center is moved vertically | | | |
| Vertical Operation Mode | CH1/ CH2 / DUAL (ALT/CHOP)/ ADD/ CH2 Inverse | | | |
| Chopping Frequency | Approx. 400kHz | | | |
| Input Coupling | AC/GND/DC | | | |
| Max. Input Voltage | 300Vpeak at 1kHz or less(Max effective readout: 40Vpp(14Vrms)/probe set at X1; 400Vpp(140Vrms)/probe set at X10) | | | |
| Isolation Between Channels | At 5mV/DIV Range: > 1000:1 at 50kHz; > 30:1 at 20MHz / 40MHz / 60MHz | | | |
| HORIZONTAL SYSTEM | Sweep Time | 0.2 μ s - 0.2s/DIV 19 steps in 1-2-5 sequence | | |
| | Sweep Accuracy | +/-3%, +/-5% at X10 MAG(10ns/50ns not calibrated) | | |
| | Trimming Ratio | \leq 1/2.5 of panel indicated value | | |
| | Sweep Magnification | X 10 MAG | | |
| | Linearity | +/-3%; X10MAG: +/-5% (10ns ~ 50ns not calibrated) | | |
| TRIGGER SYSTEM | Position Shift Caused by X10MAG | Within 2DIV, at CRT screen center | | |
| | Mode | AUTO/NORM/TV-V/TV-H | | |
| | Trigger Level Lock | Yes | | |
| | Source | CH1/CH2/EXT/LINE | | |
| | Coupling | AC: 10Hz to full bandwidth | | |
| | Trigger Slope | "+" or "-" | | |
| | Trigger Sensitivity | 10Hz ~ 2MHz: 0.5DIV, TRIG-ALT: 2DIV; EXT: 200mV | 2MHz ~ 20MHz: 1.5DIV | 20MHz ~ 60MHz: 2DIV |
| | | CH1/CH2 | 3DIV | |
| | | EXT | 800mV | |
| | | TV SYNC pulse | > 1DIV (EXT: 1V) | |
| External Trigger Input | Input impedance: Approx. 1M Ω / 25pF Max. input voltage: 300V (DC + ACpeak); AC frequency < 1kHz | | | |
| X-Y MODE OPERATION | Input | X-axis: CH1, Y-axis: CH2 | | |
| | Sensitivity | Same as vertical axis | | |
| | Band Width(-3dB) | Axis X: DC ~ 500kHz | | |
| Z-AXIS INPUT | Phase Difference | \leq 3° from DC to 50kHz | | |
| | Sensitivity | 5Vpp (Positive-going signal decreases intensity) | | |
| | Frequency Bandwidth | DC ~ 2MHz | | |
| OUTPUT SIGNAL | Input Resistance | Approx. 47k Ω | | |
| | Max. Input Voltage | 30V (DC+ACpeak, AC frequency \leq 1kHz) | | |
| | CH1 Output | At least 20mV/DIV into a 50 Ohm termination, 50Hz ~ 5MHz | | |
| FREQUENCY COUNTER | Display | 6 digit LED | | |
| | Accuracy | 1Hz(0~1MHz), 10Hz(1MHz~10MHz), 100Hz(10MHz~60MHz) | | |
| | Sensitivity | Same as trigger system | | |
| CALIBRATION | Signal | Positive going square wave at 1kHz (2Vpp +/-2.0%) | | |
| | Duty Cycle | 48:52 | | |
| | Output Impedance | Approx. 1k Ω | | |
| POWER SOURCE | AC110V/220 +/-10%, 50/60Hz | | | |