Oscilloscopes

CS-5300 SERIES

100MHz 2-Channel Programmable Oscilloscope (With Digital Readout / Cursor)

CS-5370P

100MHz 3-Channel Oscilloscope (With Digital Readout / Cursor)

CS-5370

50MHz 3-Channel Oscilloscope (With Digital Readout / Cursor)

CS-5350

100MHz 3-Channel Oscilloscope

CS-5375

50MHz 3-Channel Oscilloscope

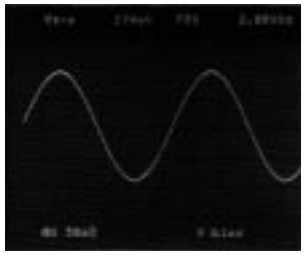
CS-5355

OUTLINE

The CS-5300 Series are 3-channel (2-channel for CS-5370P) Oscilloscopes developed with concepts of high function design, high accuracy and easy operation. The panel layout never diminishes the intuitive and high-speed response provide fatigue free operation even after long-hours of use. These models incorporating readout function (with CS-5370P/5370/ 5350) offer you parameter measurement and auto setup functions enabling to measure AC voltage (Vp-p), DC voltage, frequency and period. All of these models are provided with full features including ±2% high-accuracy measurement, delay sweep function, automatic triggering and high intensity, high-resolution CRT. The CS-5300 Series with high-performance will surely assist you in many kinds of field activities.

CS-5370P/5370/5350 FEATURES

Parameter Auto Measurement Function



It is possible to measure the voltage, frequency and period automatically just input the signal. Especially for voltage measurement, measurement mode is automatically selected according to the input selector. For example, when the AC input is selected, "Peak-to-Peak" voltage is automatically measured, and when the DC input is selected, DC voltage is measured automatically.

Auto Setup Function

By pressing the AUTO SET key, the voltage range and time range are selected automatically.

RS-232C OPTION **GP-IB OPTION**

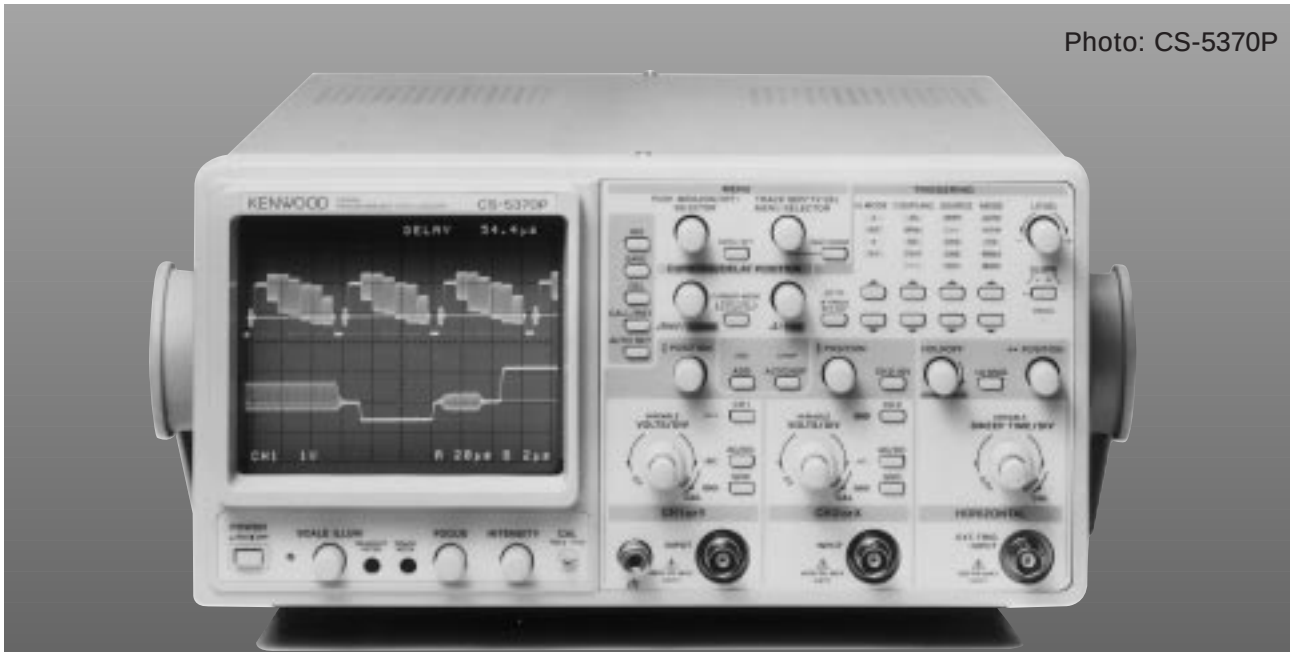
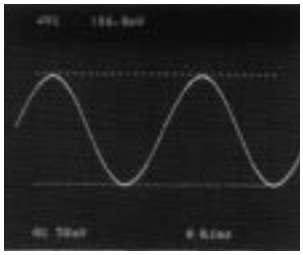


Photo: CS-5370P

Cursor Measurement Function



The cursor measurement function allows a high accuracy measurement of signal values. When the probes are used, its attenuation ratio can be converted automatically. It is also possible to measure the voltage value and phase differences. When the delay sweep is used, the delay time is also displayed, enabling an accurate measurement results without any errors due to visual checks in conventional systems.

CH3 readout, Sensitivity switch function (CS-5370, CS-5350)

In addition to the normal readout cursor, a CH3 readout function is also provided enabling a cursor measurement of the CH3 signal. The sensitivity is selectable from 0.1V/div. and 0.5V/div.

Programmable fanction (CS-5370P only)

Internal non volatile program memory allows programmed sequences of up to 100 steps.
Optional RS-232C or GP-IB interface card enable bus controlled set up and waveform adjustment.

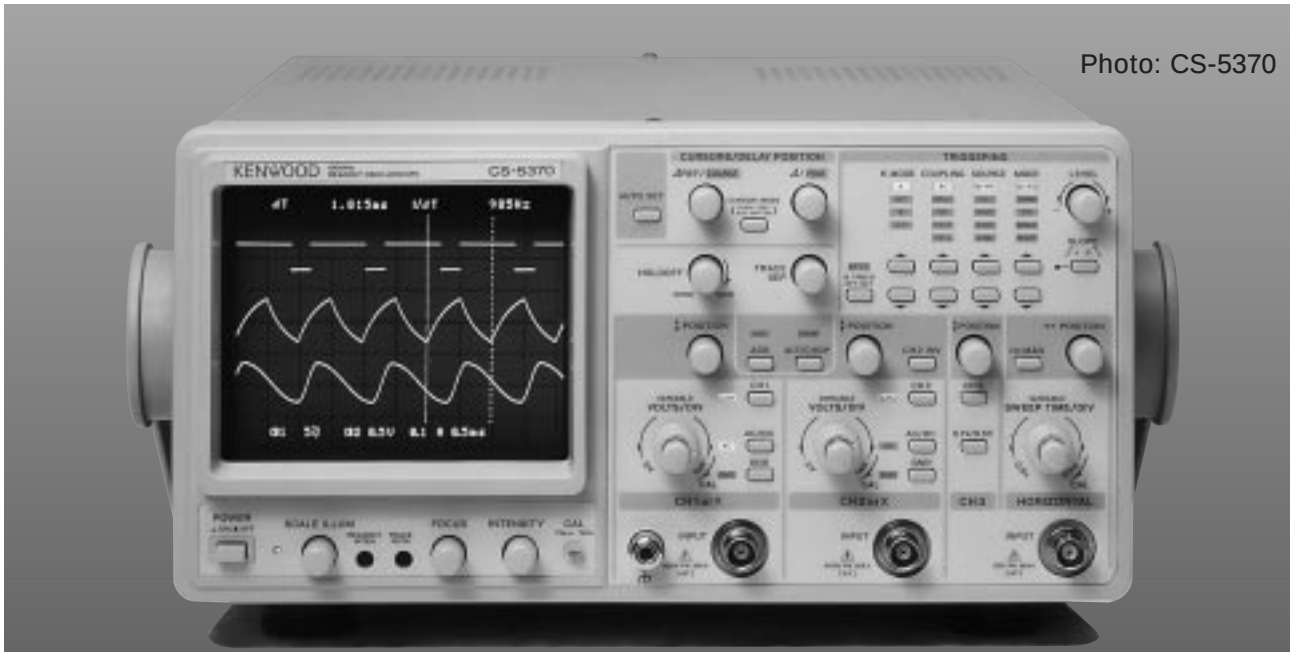


Photo: CS-5370

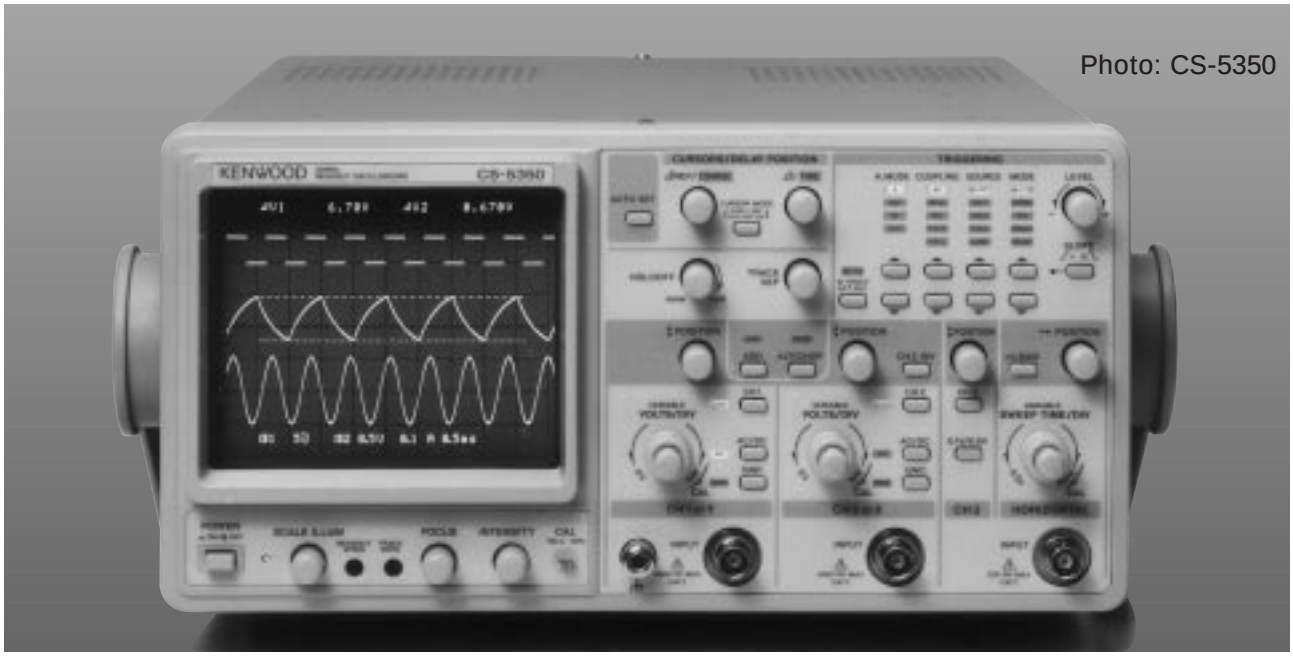


Photo: CS-5350

CS-5370P/CS-5370/CS-5350 SPECIFICATIONS

Model		CS-5370P/CS-5370			CS-5350		
CRT Type/accelerating voltage		150 mm rectangular with iinternal graticule 8 × 10 div. (1 div.=10mm) /approx. 12 kV (approx. 17 kV for CS-5370P)					
Vertical Axis (CH1, CH2)							
Sensitivity		5 mV to 5 V/div. ± 2%, 1 mV, 2 mV/div. ± 5%, 1-2-5 step, 12 ranges, fine adjustable within the selected range					
Input Impedance		1 MΩ ± 1%, approx. 20 pF					
Frequency Response							
	5 mV to 5 V/div.	DC: DC to 100 MHz (within -3 dB) AC: 5 Hz to 100 MHz (within -3 dB)			DC: DC to 50 MHz (within -3 dB) AC: 5 Hz to 50 MHz (within -3 dB)		
	1 mV, 2 mV/div.	DC: DC to 20 MHz (within -3 dB) AC: 5 Hz to 20 MHz (within -3 dB)					
Rising Time		5 mV to 5 V/div.: approx. 3.5 ns 1 mV, 2 mV/div.: approx. 17.5 ns			5 mV to 5 V/div.: approx. 7 ns 1 mV, 2 mV/div.: approx. 17.5 ns		
Signal Delay Time		Leading edge can be confirmed using a square wave that has a rising time of less than this unit					
Crosstalk		-40 dB (at 1 kHz)					
Max. Input Voltage		800 Vp-p or 400 V (DC + AC peak, 1 kHz)					
Vertical Axis (CH3) (except CS-5370P)							
Sensitivity		0.1 V, 0.5 V/div. ± 2%					
Input Impedance		1 MΩ ± 1%, approx. 20 pF					
Frequency Response		DC: DC to 100 MHz (within -3 dB)			DC: DC to 50 MHz (within -3 dB)		
Rising Time		Approx. 3.5 ns			Approx. 7 ns		
Signal Delay Time		Leading edge can be confirmed using a square wave that has a rising time of less than this unit					
Max. Input Voltage		100 Vp-p or 50 V (DC + AC peak, 1 kHz)					
Vertical Axis							
Operation Mode		CH1, CH2, CH3 (except for CS-5370P), ADD, ALT, CHOP					
Chopping Frequency		Approx. 250 kHz					
Polarity Inversion		CH2 only					
Horizontal (CH2 Input)							
Sensitivity		5 mV to 5 V/div. ± 3%, 1 mV, 2 mV/div. ± 5%, 1-2-5 step, 12 ranges, fine adjustable within the selected range					
Input Impedance		Same as vertical axis (CH2)					
Frequency Response		DC: DC to 1 MHz (-3 dB), AC: 5 Hz to 1 MHz (-3 dB)					
X-Y Phase Difference		Less than 3° at 100 kHz					
Operation Mode		Switchable to X-Y mode with H.MODE key CH1: Y axis, CH2: X axis					
Max. Input Voltage		Same as vertical axis (CH2)					
Sweep							
Sweep Mode		A, ALT, B, X-Y					
Sweep Time	A Sweep	0.5 s to 50 ns/div. ± 2%, 1-2-5 step, 22 ranges, fine adjustable within the selected range					
	B Sweep	50 ms to 50 ns/div. ± 2%, 1-2-5 step, 19 ranges					
Sweep Magnification		× 10 ± 5%, (± 8% at 0.5 µs/div.)					
Linearity		± 3% (± 5% at × 10 MAG mode)					
Hold Off		A Sweep, continuously variable from NORM position					
Trace Separation		B Sweep is continuously variable ± 4 div. with respect to A sweep.					
Delay Sweep Mode		Continuous delay (After Delay), Synchronous delay (B TRIG'D): Synchronized with trigger signal					
Delay Time		Continuously variable from 0.2 div. to 10 div. (0.5s/div. to 50ns/div.)					
Delay Time Error		± (3% of setting value + 1% of full scale) + (0 to 300 ns)					
Delay Jitter		20000 (10 times of A Sweep setting value) : 1 (at A Sweep 1 ms/div, B Sweep 1 µs/div)					
Triggering Mode							
Trigger Mode		AUTO, NORM, FIX, SINGLE, RESET					
Trigger Sources		VERT, CH1, CH2, CH3 (except for CS-5370P), LINE					
Trigger Coupling		AC, HF-REJ, DC, TV-F, TV-L					
Trigger Sensitivity (NORM MODE)	Coupling	Frequency	NORM	FIX*	Frequency	NORM	FIX*
	AC	10Hz to 50MHz	1.0 div	1.5 div	10Hz to 20MHz	1.0 div	1.5 div
		50MHz to 100MHz	1.5 div	2.0 div	20MHz to 50MHz	1.5 div	2.0 div
	HF-REJ	10Hz to 10kHz	1.0 div	1.5 div	10Hz to 10kHz	1.0 div	1.5 div
		10 kHz or more	> min	> min	10 kHz or more	> min	> min
	DC	DC to 50MHz	1.0 div	1.5 div	DC to 20MHz	1.0 div	1.5 div
		50MHz to 100MHz	1.5 div	2.0 div	20MHz to 50MHz	1.5 div	2.0 div
	TV-F, TV-L	Composite video signal	1.5 div		Composite video signal	1.5 div	
		(Above values are obtained with the signal input of: AUTO: 40 Hz or more, FIX: 50 Hz or more Internal sensitivity indicated as the amplitude on the CRT. Sensitivity in HF-Rej mode ">min" denotes the amplitude required for synchronization will increase.)					
Calibration Signal							
Waveform		Square wave					
Polarity		Positive					
Amplitude		1 Vp-p ± 1%					
Frequency		1 kHz ± 0.1%					

Model		CS-5370P/CS-5370	CS-5350
Intensity Modulation			
Input Voltage		Dims at TTL high level (+5V)	
Input Impedance		Approx. 10 kΩ	
Frequency Response		DC to 5 MHz	
Max. Input Voltage		84 Vp-p or 42 V (DC + AC peak, 1 kHz)	
CH1 Signal Output (50Ω Load)			
Output Voltage		Approx. 50 mVp-p/div.	
Output Impedance		Approx. 50Ω	
Frequency Response			
	5 mV to 5 V/div.	100 Hz to 100 MHz (-3 dB)	100 Hz to 50 MHz (-3 dB)
	1 mV, 2 mV/div.	100 Hz to 20 MHz (-3 dB)	
Trace Rotation		Enables trace rotation adjustment by semi-fixed controller on the panel.	

Readout Section

Panel Setup Value		CH1, CH2 scale factor (with probe detection), CH3 scale factor (except CS-5370P), V-UNCAL, ADD, INV, A/B Sweep scale factor (MAG conversion, "*" is displayed in MAG mode), X-Y, Sweep UNCAL, DELAY, TIME, B TRIG'D
Cursor Measurement (ΔV1 only in X-Y mode)		ΔV1: Voltage display by converting CH1 scale factor ΔV2: Voltage display by converting CH2 scale factor ΔV3: Voltage display by converting CH3 scale factor (except CS-5370P) ΔT : Time display by converting A Sweep scale factor Δ1/T: Frequency display by converting Sweep scale factor
Volts/Div or Time/Div UNCAL mode		RATIO: Voltage ratio, time ratio display with 5 div. on the CRT as 100% PHASE: Phase difference display with 5 div. on the CRT as 360°
Resolution/Measurement Error		10 bits/± 4%
Measuring Range	Vertical	More than ± 3.6 div. from the center of CRT
	Horizontal	More than ± 4.6 div. from the center of CRT
Parameter auto setting function		Each parameter is measured and displayed for the signal selected as the trigger signal source from CH1 or CH2
Frequency (FRQ)		Mode selectable in Cursor mode. Measured with internal counter to be displayed
Frequency Range		2 Hz to 100 MHz (2 Hz to 50 MHz for CS-5350)
Effective Digits/Accuracy		3 digits/0.01% ± 1 digit
Measurement Sensitivity		Same as trigger sensitivity
Period (PER)		Mode selectable in Cursor mode. Measured with internal counter to be displayed
Measurement Range		0.5 s to 10 ns (0.5 s to 20 ns for CS-5350)
Effective Digits/Accuracy		3 digits/0.01% ±1 digit
Measurement Sensitivity		Same as trigger sensitivity
AC Voltage (Vp-p)		Mode selectable in Cursor mode. Peak-to-peak voltage is measured and displayed
Measurement Range		0.5 div. to Effective CRT area
Frequency Range		10 Hz to 100 kHz
Effective Digits/Accuracy		3 digits/10 Hz to 40 Hz: ± {8% + attenuator setup value (V/div) × 0.04 div}
		40 Hz to 100 kHz: ± {3% + attenuator setup value (V/div) × 0.04 div}
DC Voltage (DCV)		Mode selectable in Cursor more. Average DC voltage is measured and displayed
Sensitivity		0.5 div. to Effective CRT area
Effective Digits/Accuracy		3 digits/± {3% + attenuator setup value (V/div) × 0.04 div}
Auto Setup		For CH1, CH2, Vertical axis attenuator, Sweep range, Vertical position, Horizontal position are automatically setup
Period		1.5 to 5 periods (H.Variable,: CAL mode, for input signal up to 10 MHz)
Amplitude		2 to 4 div. (1 to 2 div. for 2-channel)
Frequency (Size wave)		50 Hz to 100 MHz (50 Hz to 50 MHz for CS-5350)
Position		Vertical axis: 1 channel ; almost center of CRT, 2 channel ; CH1 approx. +2 div., CH2 approx. -2 div. from the center of CRT Horizontal axis: starts from left edge of CRT scale
Backup		Panel setup values are backed up by built-in battery. Battery service life approx. 30,000 hours (with room temperature)

Programable Function (CS-5370P only)

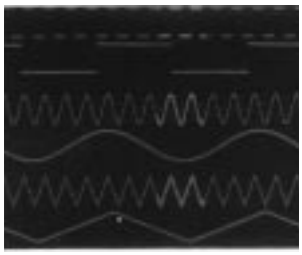
Program capacity	Maximum 100 steps (Possible to divide up to 5 groups.)	

Power Supply & Others

Power Requirements		
Input Voltage	AC 100/120/220/230 V (±10%), 50 Hz / 60 Hz	
Power Consumption	Max. 56 W, 69 VA (Max. 62W, 76 VA for CS-5370P)	Max. 55 W, 68 VA
Insulator Voltage	AC 1.5 kV, 1 minute	
Insulator Resistance	More than 100MΩ at DC 500 V	
Dimensions (W x H x D)	305 × 150 × 400 mm /(344 × 165 × 459 mm, Maximum dimensions)	
Weight	Approx. 9.3 kg (Approx. 9.6 kg for CS-5370P)	
Operating Environment (limited as indoor use)		
Overvoltage Category/Altitude/Pollution	II / 2000 m / 2	
Specification Guaranteed		
Temperature & Humidity	+10 to +35°C, 85% or less (with no condensation)	
Operation/Storage		
Temperature & Humidity	0 to +40°C, 85% or less (with no condensation)/ -20 to +70°C, 85% or less (with no condensation)	
Accessories	Operation Manual (1)/Adjusting Screwdriver (1)/Power Supply Cable (1)	
Probe	PC-51 (2)	PC-53 (2)
Applicable Standards		
Safety Standard	EN61010-1 & A2 (1995)	
EMI	EN55011 (1991) Class B, FCC 47 CFR, Part 15, Sub-Part B, Class B	
Immunity	IEC801-2 (1991) 8kVAD, IEC801-3 (1984) 3V/m, IEC801-4 (1998)	

CS-5300 SERIES COMMON FEATURES

3-Channel 8-Trace Waveform Display (CS-5370P, 2 channel)



CS-5300 series enable the display of CH3 input in addition to CH1 and CH2. These three input signals to CH1, CH2 and CH3 can be displayed at the same time as the main (A) sweep waveform.
Furthermore, an alternated delay sweep function displayed as the delayed (B) sweep waveforms of each signal.

High-Sensitivity Design with Vertical Axis of 1 mV/div

The vertical axis sensitivity can be varied continuously from 1 mV/div. to 5 V/div. using the 1-2-5 step attenuator. The 1 mV/div. position is very useful to measure low-level and complicated signals. (Frequency response at 1 mV/div. and 2mV/div are DC to 20 MHz (-3 dB)).

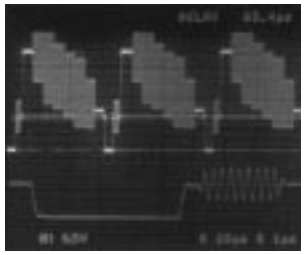
Automaticv Sync (FIX) Function

With this function, the synchronization level is automatically controlled by tracking the amplitude of the waveform to maintain the sync lock status. This function eliminates annoying and complicated synchronization operations.

Ease Operate Panel Layout

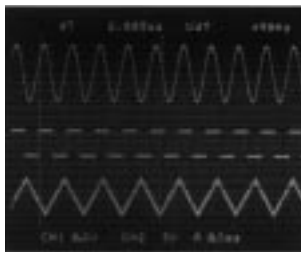
The CS-5370P, CS-5370 and CS-5350 used touch switches and LEDs. The CS-5375 and CS-5355 used push switches and lever switches for easy operation.

Delayed sweep with waveform partial magnification capability



The main (A) sweep waveform in which the magnified section is brightened by intensity modulation and the delayed (B) sweep waveform which shows only the magnified section can be observed simultaneously. This is a real alternate delayed sweep.

V mode sync for stable display of 3 signals (2 Signals of CH1 and CH2 for CS-5370P)



Even when the CH1, CH2 and CH3 input signal frequencies are different, each signal can be synchronized securely and its waveform can be displayed stably.

High-Accuracy ± 2% Design for More Precision Measurement

In order to obtain highly reliable measurement results, the vertical axis sensitivity and sweep time for the main circuit is maintained within ± 2% precision. Other specifications also guarantees the rated values (under temperature conditions of 10 to 30°C, humidity of 85% or less).

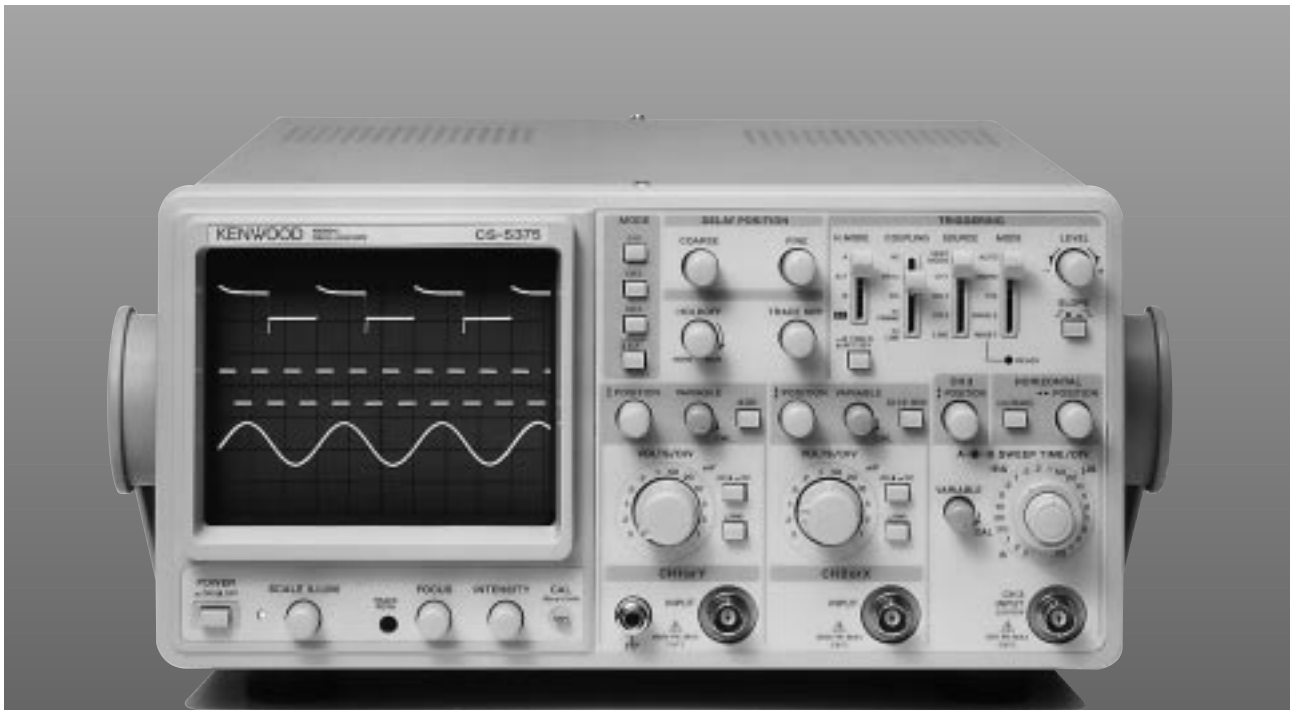
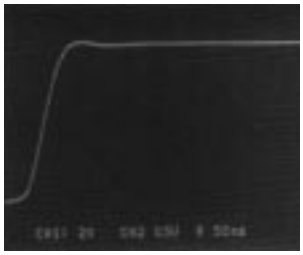


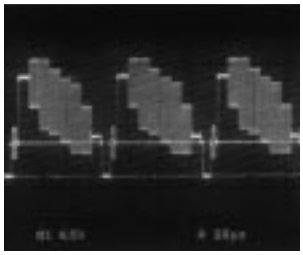
Photo: CS-5375

Maximum sweep rate of 5 ns/div (x10 MAG)

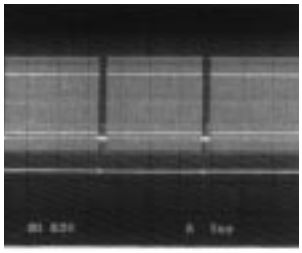


The sweep rate can be varied continually from 0.5 s/div to 50 ns/div. The signal delay line is installed so that the positive rise of high-speed signals and high-frequency signals can be measured accurately

Built in Video clamp circuit for easy operation



● Horizontal TV signal



● Vertical TV signal

Built in Video Clamp function which enables observation of the flame and line TV signals at the touch of a button, while high-stability synchronization is obtained without performing annoying synchronizing operations.

Square-Type 150 mm CRT with Self-Illuminated Light and Inside Scale (12 kV) (17kV for CS-5370P)

A large-sized, square, dome-mesh type CRT with rear accelerator is employed. It features both high intensity and high resolution while providing accurate measurements without parallax view. The auto focus circuit is also incorporated to display sharp waveforms at all times.

Single sweep for observations of single-shot channel

The single sweep function is powerful in measurement of single-shot or sudden channel. Waveform photography using a camera is as easy as ordinary, visual observations. It is easy not only for observations during normal visual inspections but also for camera shots of the waveforms.

Variable hold-off allowing observation of waveforms with complicated cycle

Signals which are hard to be synchronized due to complicated repetition cycles, for example digital signals and video signal bursts, can be synchronized stably by converting them into the hold-off time.

High-Accuracy Calibration Signals

A calibration signal output is provided to output the highly accurate frequency of ± 0.1% (CS-5370P/CS-5370/CS-5350) and voltage accuracy of ± 1%, enabling checking of the measurement precision at any required time.

CH1 signal output connector

The CH1 signal output is obtained by branching the input signal in the middle of the signal line. As this connector outputs the input signal at a rate of 50 mV/div, connecting a frequency counter makes it possible to measure the frequency of a very low signal while observing its waveform

Wide Dynamic Range and Distortion-Free Accurate Waveform Display

Its wide dynamic range having greater margins assures the linearity of the waveforms displayed on the CRT, providing highly accurate waveform displays without any distortion up to the upper frequency limits.

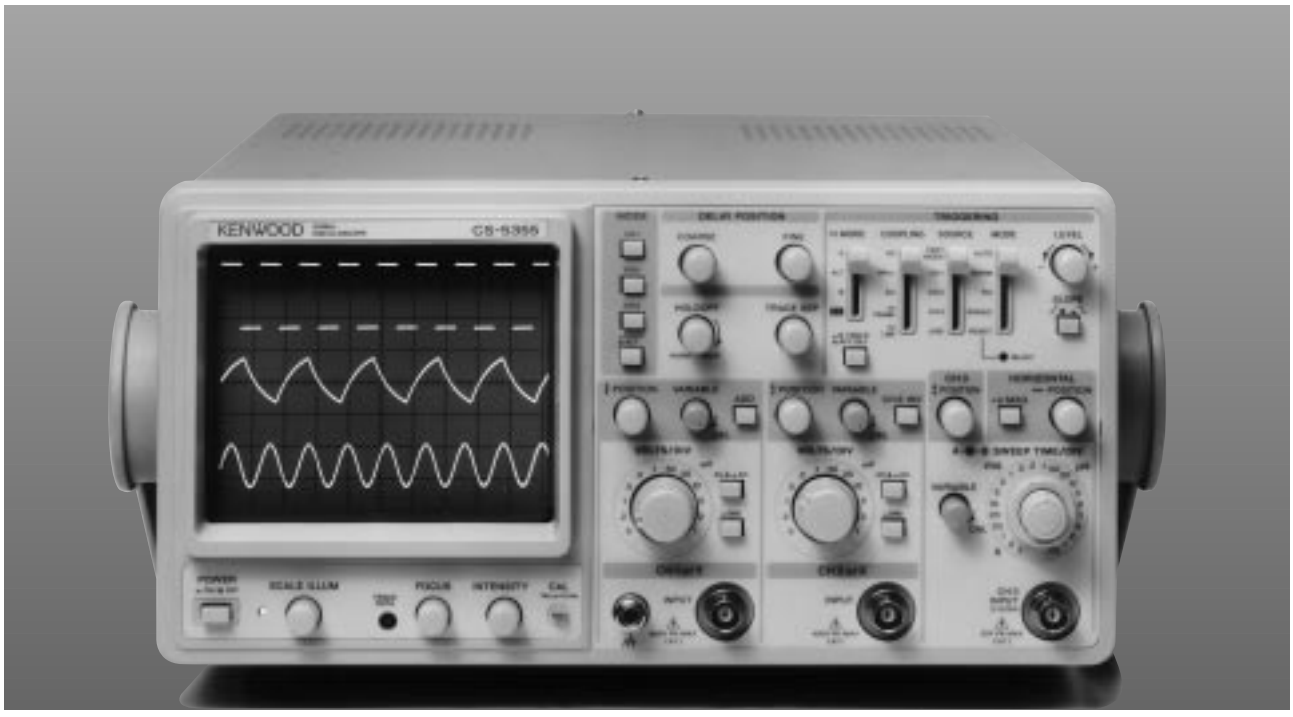


Photo: CS-5355

Other Features

● All position knobs and controls are provided on the front panel.
● A High-sensitivity X-Y function is convenient for the measurement of phase differences between two input signals.
● A Trace Rotation function allows an easy correction of the inclination of the trace line due to earth magnetism.
● LINE Synchronization is provided
● A Trace Separation function shifts the B sweep waveform upward or downward by 4 div. from A sweep waveform.
● The waveform to which the brightness modulation is applied can also be observed.
● Added or extracted waveforms using ADD and CH2 INV functions can also be observed.
● Scale illumination convenient for taking photographs or observation in dark areas is provided.
● CRT scale also provides 0, 10, 90 and 100% indications; convenient for measurement of rising time, etc.
● A 10-times sweep waveform magnification function (X10 MAG) is provided.

CS-5375/CS-5355 SPECIFICATIONS

Model		CS-5375	CS-5355
CRT Type/accelerating voltage		150 mm rectangular with iinternal graticule 8 × 10 div. (1 div.=10mm) /approx. 12 kV	
Vertical Axis (CH1, CH2)			
Sensitivity		5 mV to 5 V/div. ± 2%, 1 mV, 2 mV/div. ± 5%, 1-2-5 step, 12 ranges, fine adjustable within the selected range	
Input Impedance		1 MΩ ± 1%, approx. 20 pF	
Frequency Response			
	5 mV to 5 V/div.	DC: DC to 100 MHz (within -3 dB) AC: 5 Hz to 100 MHz (within -3 dB)	DC: DC to 50 MHz (within -3 dB) AC: 5 Hz to 50 MHz (within -3 dB)
	1 mV, 2 mV/div.	DC: DC to 20 MHz (within -3 dB) AC: 5 Hz to 20 MHz (within -3 dB)	
Rising Time		5 mV to 5 V/div.: approx. 3.5 ns 1 mV, 2 mV/div.: approx. 17.5 ns	5 mV to 5 V/div.: approx. 7 ns 1 mV, 2 mV/div.: approx. 17.5 ns
Signal Delay Time		Leading edge can be confirmed using a square wave that has a rising time of less than this unit	
Crosstalk		-40 dB (at 1 kHz)	
Max. Input Voltage		800 Vp-p or 400 V (DC + AC peak, 1 kHz)	
Vertical Axis (CH3)			
Sensitivity		0.1 V, 0.5 V/div. ± 2%	
Input Impedance		1 MΩ ± 1%, approx. 20 pF	
Frequency Response		DC: DC to 100 MHz (within -3 dB)	DC: DC to 50 MHz (within -3 dB)
Rising Time		Approx. 3.5 ns	Approx. 7 ns
Signal Delay Time		Leading edge can be confirmed using a square wave that has a rising time of less than this unit	
Max. Input Voltage		100 Vp-p or 50 V (DC + AC peak, 1 kHz)	
Vertical Axis			
Operation Mode		CH1, CH2, CH3, ADD, ALT, CHOP	
Chopping Frequency		Approx. 250 kHz	
Polarity Inversion		CH2 only	
Horizontal (CH2 Input)			
Sensitivity		5 mV to 5 V/div. ± 3%, 1 mV, 2 mV/div. ± 5%, 1-2-5 step, 12 ranges, fine adjustable within the selected range	
Input Impedance		Same as vertical axis (CH2)	
Frequency Response		DC: DC to 1 MHz (-3 dB), AC: 5 Hz to 1 MHz (-3 dB)	
X-Y Phase Difference		Less than 3° at 100 kHz	
Operation Mode		Switchable to X-Y mode with H.MODE key CH1: Y axis, CH2: X axis	
Max. Input Voltage		Same as vertical axis (CH2)	
Sweep			
Sweep Mode		A, ALT, B, X-Y	
Sweep Time	A Sweep	0.5 s to 50 ns/div. ± 2%, 1-2-5 step, 22 ranges, fine adjustable within the selected range	
	B Sweep	50 ms to 50 ns/div. ± 2%, 1-2-5 step, 19 ranges	
Sweep Magnification		× 10 ± 5%, (± 8% at 0.5 µs/div.)	
Linearity		± 3% (± 5% at × 10 MAG mode)	
Hold Off		A Sweep, continuously variable from NORM position	
Trace Separation		B Sweep is continuously variable ± 4 div. with respect to A sweep.	
Delay Sweep Mode		Continuous delay (After Delay), Synchronous delay (B TRIG'D): Synchronized with trigger signal	
Delay Time		Continuously variable from 0.2 div. to 10 div. (0.5 s/div. to 50ns/div.)	
Delay Time Error		± 4% of CRT readout value + (0 -- 300 ns)	
Delay Jitter		20000 (10 times of A Sweep setting value) : 1 (at A Sweep 1 ms/div, B Sweep 1µs/div)	

Model		CS-5375			CS-5355		
Triggering Mode							
Trigger Mode		AUTO, NORM, FIX, SINGLE, RESET					
Trigger Sources		VERT, CH1, CH2, CH3, LINE					
Trigger Coupling		AC, HF-REJ, DC, TV-F, TV-L					
Trigger Sensitivity	Coupling	Frequency	NORM	FIX*	Frequency	NORM	FIX*
	AC	10Hz to 50MHz	1.0 div	1.5 div	10Hz to 20MHz	1.0 div	1.5 div
		50MHz to 100MHz	1.5 div	2.0 div	20MHz to 50MHz	1.5 div	2.0 div
	HF-REJ	10Hz to 10kHz	1.0 div	1.5 div	10Hz to 10kHz	1.0 div	1.5 div
		10 kHz or more	> min	> min	10 kHz or more	> min	> min
	DC	DC to 50MHz	1.0 div	1.5 div	DC to 20MHz	1.0 div	1.5 div
		50MHz to 100MHz	1.5 div	2.0 div	20MHz to 50MHz	1.5 div	2.0 div
	TV-F, TV-L	Composite video signal	1.5 div		Composite video signal	1.5 div	
		(Above values are obtained with the signal input of: AUTO: 40 Hz or more, FIX: 50 Hz or more Internal sensitivity indicated as the amplitude on the CRT. Sensitivity in HF-Rej mode ">min" denotes the amplitude required for synchronization will increase.)					
Calibration Signal							
Waveform		Square wave					
Polarity		Positive					
Amplitude		1 Vp-p ± 1%					
Frequency		1 kHz ± 0.1%					
Modulation							
Input Voltage		0 to + 5 V, goes off at + 5 V					
Input Impedance		Approx. 10 kΩ					
Frequency Response		DC to 5 MHz					
Max. Input Voltage		84 Vp-p or 42 V (DC + AC peak, 1 kHz)					
CH1 Signal Output (50Ω Load)							
Output Voltage		Approx. 50 mVp-p/div.					
Output Impedance		Approx. 50Ω					
Frequency Response							
	5 mV to 5 V/div	100 Hz to 100 MHz (-3 dB)			100 Hz to 50 MHz (-3 dB)		
	1 mV, 2 mV/div.	100 Hz to 20 MHz (-3 dB)					
Trace Rotation		Bright line angle adjustable using semi-fixed resistor on the control panel.					

Power Supply & Others

Power Requirements		
Input Voltage	AC 100/120/220/230 V (±10%), 50 Hz / 60 Hz	
Power Consumption	Max. 45 W, 58 VA	Max. 44 W, 57 VA
Insulator Voltage	AC 1.5 kV, 1 minute	
Insulator Resistance	More than 100MΩ at DC 500 V	
Dimensions (W x H x D)	305 × 150 × 400 mm /(344 × 165 × 459 mm, Maximum dimensions)	
Weight	Approx. 8.8 kg	
Operating Environment (limited as indoor use)		
Overvoltage Category/Altitude/Pollution	II / 2000 m / 2	
Specification Guaranteed		
Temperature & Humidity	+10 to +35°C, 85% or less (with no condensation)	
Operation/Storage		
Temperature & Humidity	0 to +40°C, 85% or less (with no condensation)/ -20 to +70°C, 85% or less (with no condensation)	
Accessories	Operation Manual, (1) /Adjusting Screwdriver (1) /Power Supply Cable (1)	
Probe	PC-59 (2)	PC-54 (2)
Applicable Standards		
Safety Standard	EN61010-1 & A2 (1995)	
EMI	EN55011 (1991) Class B, FCC 47 CFR, Part 15, Sub-Part B, Class B	
Immunity	IEC801-2 (1991) 8kVAD, IEC801-3 (1984) 3V/m, IEC801-4 (1998)	