

## 16.1 Input Section

Item	Specifications
Number of Input Channels	4 (CH1 to CH4) , or 2 (CH1 to CH2) for the DL1720
Input Coupling Settings	AC 1 M $\Omega$ , DC 1 M $\Omega$ , DC 50 $\Omega$ , GND
Input Connector	BNC
Input Impedance	1 M $\Omega$ $\pm$ 1.0%, approx. 20 pF 50 $\Omega$ $\pm$ 1.0% (VSWR 1.4 or less (DC to 500 MHz))
Voltage-Axis Sensitivity Setting	1 M $\Omega$ input : 2 mV/div to 10 V/div (1-2-5 steps) 50 $\Omega$ input : 2 mV/div to 1 V/div (1-2-5 steps)
Maximum Input Voltage	1 M $\Omega$ input (at 1 kHz or less): 400 V (DC + AC peak) (282 Vrms CATII) 50 $\Omega$ input : 5 Vrms or less and 10 Vpeak or less
DC Offset Range (Max) (At 1 : 1 probe attenuation)	2 mV/div to 50 mV/div : $\pm$ 1 V 100 mV/div to 500 mV/div : $\pm$ 10 V 1 V/div to 10 V/div : $\pm$ 100 V
Vertical (Voltage) Axis Precision	
DC Precision <sup>*1</sup>	: $\pm$ (1.5% of 8 div + offset voltage precision)
Offset Axis Precision <sup>*1</sup>	2 mV/div to 50 mV/div : $\pm$ (1% of set value + 0.2 mV) 100 mV/div to 500 mV/div : $\pm$ (1% of set value + 2 mV) 1 V/div to 10 V/div : $\pm$ (1% of set value + 20 mV)
Frequency Characteristics <sup>*1*2</sup>	50 $\Omega$ input (-3dB point when sine wave of amplitude $\pm$ 4 div is input) 1 V/div to 10 mV/div : DC to 500 MHz 5 mV/div to 2 mV/div : DC to 400 MHz 1 M $\Omega$ input (defined at the tip of the probe when using the passive probe 700988) 10 V/div to 10 mV/div : DC to 400 MHz 5 mV/div to 2 mV/div : DC to 300 MHz
-3dB Point for AC Coupling Used	10 Hz or less (When using the 10 : 1 probe (standard accessory), 1 Hz or less)
Interchannel Skew (with identical settings)	1 ns or less
Residual Noise <sup>*3</sup>	Larger of $\pm$ 1.25 mV or $\pm$ 0.15 div (typical <sup>*4</sup> )
Interchannel Isolation (at identical voltage sensitivity, DC to 500 MHz)	-34 dB (typical <sup>*4</sup> )
A/D Conversion Resolution	8 bits (24 LSB/div)
Probe Attenuation Settings	1 : 1, 10 : 1, 100 : 1, 1000 : 1
Bandwidth	100 MHz or 20 MHz band limit ON/OFF
Maximum Sample Rate	Realtime sampling mode With interleave ON : 1 GS/s With interleave OFF : 500 MS/s Repetitive sampling mode: 100 GS/s
Maximum Record Length	With interleave ON : 1 Mwords/CH With interleave OFF : 500 kwords/CH

\*1 As measured following calibration (after 30-minute warmup), with internal-clock timebase, under standard operating conditions as described on section 16.11.

\*2 For repetitive events

The frequency region for single shot is DC to sampling frequency/2.5 or the frequency region for the repetitive event, whichever is less.

\*3 Measured under following conditions: input block shorted; 10 kWord record length; Normal acquisition mode; accumulation OFF; 1 : 1 probe attenuation

\*4 The typical value is a representative or standard value. It is not a warranted value.

## 16.2 Trigger Section

Item	Specifications
Trigger Mode	Auto, Auto Level, Normal, Single, Single(N)
Trigger Source	CH1 to CH4 (or CH1 to CH2 for the DL1720), EXT ,LINE
Trigger Coupling	CH1 to CH4 (or CH1 to CH2 for the DL1720) : DC/AC EXT : DC
HF Rejection	20 kHz or 15 kHz band limit ON/OFF for trigger source (CH1 to CH4, or CH1 to CH2 for the DL1720)
Trigger Hysteresis	Select the trigger hysteresis width (CH1 to CH4, or CH1 to CH2 for the DL1720)
Trigger Level Setting Range	CH1 to CH4 : $\pm 4$ div from screen center (CH1 to CH2 for the DL1720) EXT : $\pm 2$ V for the DL1740 : $\pm 1$ V for the DL1720 with the $\pm 1$ V range selected : $\pm 10$ V for the DL1720 with the $\pm 10$ V range selected
Trigger Level Resolution	CH1 to CH4 : 0.01 div (CH1 to CH2 for the DL1720) EXT : 5 mV for the DL1740 : 5 mV for the DL1720 with the $\pm 1$ V range selected : 50 mV for the DL1720 with the $\pm 10$ V range selected
Trigger Level Precision <sup>*1</sup>	CH1 to CH4 <sup>*1</sup> : $\pm(1 \text{ div} + 10\% \text{ of trigger level})$ for the DL1740 (CH1 to CH2 for the DL1720) EXT <sup>*2</sup> : $\pm(50 \text{ mV} + 10\% \text{ of trigger level})$ for the DL1740 : $\pm(50 \text{ mV} + 10\% \text{ of trigger level})$ for the DL1720 with the $\pm 1$ V range selected : $\pm(500 \text{ mV} + 10\% \text{ of trigger level})$ for the DL1720 with the $\pm 10$ V range selected
External-Trigger Probe Attenuation	1 : 1, 10 : 1
Trigger Sensitivity <sup>*2</sup>	CH1 to CH4 : 1 divp-p (at DC to 500 MHz) (CH1 to CH2 for the DL1720) EXT : 100 mVp-p (at DC to 100 MHz) for the DL1740 : 100 mVp-p (at DC to 100 MHz) for the DL1720 with the $\pm 1$ V range selected : 1 Vp-p (at DC to 100 MHz) for the DL1720 with the $\pm 10$ V range selected
Trigger Position	Can be set in 1% increments of record length
Trigger Delay Setting Range	0 to 4 s
Hold Off Time Range	80 ns to 10 s
Trigger Slope	Rise, Fall, Rise/Fall (with edge trigger)

Item	Specifications
Trigger Type	<p>Edge : Activate the trigger on the edge of a single trigger source.</p> <p>A → B(N) : Trigger occurs nth time condition B becomes true after condition A becomes true.            Count : 1 to 10<sup>8</sup>            Condition A: Enter, Exit            Condition B: Enter, Exit</p> <p>A Delay B : Trigger occurs first time condition B becomes true after specified delay following condition A true.            Delay : 3 ns to 5 s            Condition A: Enter, Exit            Condition B: Enter, Exit, Both</p> <p>OR : Trigger occurs on the OR of trigger conditions that are specified on multiple trigger sources.            The trigger condition can either be edge or window. Rise (IN), Fall (OUT), or Don't Care can be specified on each channel from CH1 to CH4 (or CH1 to CH2 for the DL1720).</p> <p>Pattern : Trigger occurs on the edge of the clock channel based on the True/False condition of the parallel pattern that is specified on multiple trigger sources.            If the clock channel is set to Don't Care, then the trigger occurs only on the True/False condition (Enter/Exit) of the parallel pattern.            The parallel pattern is the AND of the channel states of each channel.</p> <p>Pulse Width : Trigger occurs on the width of the True/False condition of the parallel pattern that is specified on multiple trigger sources. The parallel pattern is the AND of the channel states of each channel or the AND of the window conditions of each channel.            Pulse&gt;T : Triggers when the width above is greater than T.            Pulse&lt;T : Triggers when the width above is less than T.            T1&lt;PLS&lt;T2 : Triggers when the width above is greater than T1 and less than T2.            Time out : Triggers when the width above exceeds Time.            Time range : 1 ns to 1 s            Time accuracy*<sup>1</sup> : ±(0.5% of setting*<sup>3</sup> + 1 ns)            Minimum detectable time*<sup>2</sup> : 2 ns (typical value*<sup>4</sup>)</p> <p>TV : Trigger for video signal, in NTSC or PAL format. Input channel must be CH1.            User can select field no. and line no.</p> <ul style="list-style-type: none"> <li>• Conditions A and B are parallel pattern conditions that are set separately to High, Low, or "Don't Care" for each channel (CH1 to CH4 for the DL1740, or CH1 to CH2 for the DL1720) and for EXT input.</li> </ul>
Trigger Gate	<p>The trigger is activated only when the trigger conditions are met while the input applied to the trigger gate input terminal (TRIG GATE IN) is active.            Select High or Low for the active level.</p>

\*1 As measured immediately after calibration, under standard operating conditions (see section 16.11), with machine warmed up.

\*2 As measured under standard operating conditions (see section 16.11) after warmed up.

\*3 When set to T1<Pulse<T2, the value of T2.

\*4 The typical value is a representative or standard value. It is not a warranted value.

## 16.3 Time Axis

Item	Specifications																
Time Axis Range	1 ns/div to 50 s/div (record length is 10 k words or more) 1 ns/div to 5 s/div (record length is 1 k words)																
Time Base Precision <sup>*1</sup>	±(0.005%)																
Time Axis Precision <sup>*1</sup>	±(0.005% + 50 ps + 1 digit) <sup>*2</sup>																
EXT CLOCK IN <sup>*3</sup>	<table border="0"> <tr> <td>Connector Type</td> <td>BNC</td> </tr> <tr> <td>Maximum Input Voltage</td> <td>±40 V(DC + ACpeak) or 28Vrms, 10 kHz or less</td> </tr> <tr> <td>Input Frequency Range</td> <td>40 Hz to 20 MHz (continuous clock only)</td> </tr> <tr> <td>Sampling Jitter not above</td> <td>±1.25 ns or less</td> </tr> <tr> <td>Minimum Input Level</td> <td>0.1 Vp-p for the DL1740, or the DL1720 with the ±1 V range selected 1 Vp-p for the DL1720 with the ± 10 V range selected</td> </tr> <tr> <td>Threshold Level</td> <td>±2 V (5 mV resolution) for the DL1740 ±1 V (5 mV resolution) for the DL1720 with the ± 1 V range selected ±10 V (50 mV resolution) for the DL1720 with the ± 10 V range selected</td> </tr> <tr> <td>Input Impedance</td> <td>Approx. 1 MΩ, 18 pF (or Approx. 1 MΩ, 20 pF for the DL1720)</td> </tr> <tr> <td>Minimum Pulse Width</td> <td>At least 10 ns (for both High and Low)</td> </tr> </table>	Connector Type	BNC	Maximum Input Voltage	±40 V(DC + ACpeak) or 28Vrms, 10 kHz or less	Input Frequency Range	40 Hz to 20 MHz (continuous clock only)	Sampling Jitter not above	±1.25 ns or less	Minimum Input Level	0.1 Vp-p for the DL1740, or the DL1720 with the ±1 V range selected 1 Vp-p for the DL1720 with the ± 10 V range selected	Threshold Level	±2 V (5 mV resolution) for the DL1740 ±1 V (5 mV resolution) for the DL1720 with the ± 1 V range selected ±10 V (50 mV resolution) for the DL1720 with the ± 10 V range selected	Input Impedance	Approx. 1 MΩ, 18 pF (or Approx. 1 MΩ, 20 pF for the DL1720)	Minimum Pulse Width	At least 10 ns (for both High and Low)
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\*1 As measured under standard operating conditions (see section 16.11) after warmed up.

\*2 1 digit may be unreliable depending on the sampling.

\*3 "EXT CLOCK IN/EXT TRIG IN/TRIG GATE IN" terminal for the DL1740 or "EXT." terminal for the DL1720

## 16.4 Display

Item	Specifications
Display	6.4 - inch color TFT liquid crystal display
Screen Size	130.6 mm (width) × 97.0 mm (height)
Total Picture Elements <sup>*1</sup>	640 × 480 dots
Waveform Picture Elements	500 × 384 dots

\*1 Liquid crystal display may include defects of about 0.02% of all picture elements.

## 16.5 Functions

### Acquisition/Display

Item	Specifications
Acquisition Mode	Select from four modes: Normal, Averaging, Envelope, Box Average.
Sampling Mode	Select realtime or repetitive sampling. (Availability depends on time-axis settings.)
Record Length	1 k words, 10 k words, 50 k words, 100 k words, 250 k words, 500 k words, 1 M words
Zoom	Can zoom up to 2 time-axis ranges of displayed waveform(s).
Display Format	1, 2, 3, 4, or 6 waveform windows (or 1, 2, or 3 waveform windows for the DL1720)
Interpolation	Display samples using dot display, "sine" interpolation, linear interpolation, or pulse interpolation.
Graticule	Select from three graticule types.
Auxiliary Display Items	Select display or nondisplay of scale values, waveform labels, or trigger mark.
X - Y Display	Display two X-Y waveform (XY1 or XY2) (or one X-Y waveform (XY1) for the DL1720)
Accumulation	Displays multiple iterations of waveform, in either "persistence mode" or "color-grade mode."
Snapshot	Freezes the current waveform on screen. Saves or loads the snapshot waveforms.
Trace Clear	Removes the currently displayed waveform.

## Vertical/Horizontal Axis Setting

Item	Specifications
Channel ON/OFF	Independent ON/OFF for each channel (CH1 to CH4, or CH1 to CH2 for the DL1720).
Input Filter	Set 20 MHz or 100 MHz band limit ON/OFF independently for each channel (CH1 to CH4, or CH1 to CH2 for the DL1720).
Vertical Position Setting	Waveforms can be moved vertically in the range $\pm 4$ div from the center of the waveform display frame.
Linear Scaling	Set scaling coefficient, offset, and unit separately for each channel (CH1 to CH4, or CH1 to CH2 for the DL1720).
Roll Mode	The roll display mode is enabled when the trigger mode is auto, auto-level, or single and the time axis is as follows. 50 ms/div to 50 s/div (except 50 ms/div to 5 s/div for 1 k words)

## Analysis

Item	Specifications
Search and Zoom Function	Search for, then expand and display a portion of the displayed waveform. Choose from the following five search methods. Edge : Count the rising or falling edges, and automatically search either edge. Serial Pattern : Automatically search a serial pattern (up to 64 bits) with a synchronized or unsynchronized clock. Parallel Pattern : Automatically search a parallel pattern from CH1-CH4, MATH1, MATH2 (or CH1-CH2, MATH1 for the DL1720). Pulse Width : Automatically search for parts where a pulse width meets specified conditions. Auto Scroll : Automatically scroll the zoom position.
History Search Function	You can search for and display waveforms from the history memory that satisfy specified conditions. Choose from the following two search methods. Zone : Set an area on the screen, then extract and display only those waveforms that pass through the area (Pass mode), or do not pass through the area (By Pass mode). Parameter : Extract and display only the automatic measurement results of the waveform parameters which meet the specified conditions.
Cursor Measurement Function	Allows selection of cursor type from Marker, Horiz, Vert, H&V, and Degree.
Automatic Measurement of Waveform Parameters Function	Capable of performing automated measurement of waveform parameters. Automated measurement of waveform parameters within one period (P-P through Int2XY), statistical processing of waveform parameters, and statistical processing on the waveform parameters of historical data. P-P, Max, Min, Ave, Rms, Sdev, High, Low, +OShot, -OShot, Int1TY, Int2TY, Int1XY, Int2XY, Freq, Period, Rise, Fall, +Width, -Width, Duty, Burst1, Burst2, Pulse, AvgFreq, AvgPeriod, and Delay (between channels). Statistical processing results. Statistics: Min, Max, Avg, Cnt, and Sdv. Waveform parameter computation. Operation between waveform parameters and constants. Operators are +, -, *, and /. Measure waveform parameters in different areas on the same channel.
Computing Functions	+, -, x, binary computation, differentiation, integration, power spectrum, inversion However, select the range for the power spectrum (1 k words/10 k words).
Phase Shift	The phase of CH1 to CH4 (or CH1 to CH2 for the DL1720) can be shifted for monitoring. Computation is performed using the phase-shifted result.
GO/NO-GO Function	Judgment is made on the automatically measured value of waveform parameters and the results are output to the printer or to a floppy disk/a Zip disk/external SCSI device, buzzer, or send a mail.* <sup>1</sup>

\*<sup>1</sup> This function can be used when the Ethernet interface (option) is installed.

## 16.5 Functions

### Screen Data Output

Item	Specifications
Built-in Printer (Option)	Outputs hard copy of screen.
External Printer	Print the screen image to an external parallel printer (via keyboard/printer interface or Ethernet* <sup>1</sup> ). Supports ESC/P, ESC/P2, LIPS3, PCL5, BJ commands, and PostScript (Ethernet interface option* <sup>1</sup> ).
Floppy Disk/Zip Disk/SCSI /Network Drive* <sup>1</sup>	Output data formats : PostScript, TIFF, BMP

\*1 This function can be used when the Ethernet interface (option) is installed.

### Data Storage

Item	Specifications
History Memory	Interleave mode ON : Retain max. 2048 waveforms recorded. Interleave mode OFF : Retain max. 1024 waveforms recorded.
Floppy Disk/Zip Disk/SCSI /Network Drive* <sup>1</sup>	Save and restore waveform data, settings, other data.

\*1 This function can be used when the Ethernet interface (option) is installed.

### Other Functions

Item	Specifications
Initialization Function	Automatically resets key settings to the factory settings. (Excludes date/time settings, settings related to the communication interface, SCSI ID number setting, settings stored to the internal memory using the store/recall function, and setting the message language.)
Auto setup Function	Automatically sets key settings to the optimum values for the input signals.
Store/Recall	Store and recall up to three arbitrary settings.
Preset Function	Sets V/div and trigger level etc. to the optimum values for TTL or ECL signal measurement, for the user settings and the current probe 700937 or 701930 (sold separately).
Action on Trigger	Hard Copy, Save to File, Buzzer and Send Mail are performed every time a trigger is activated.
Send Mail* <sup>1</sup>	Sending mails for DL1720/DL1740 condition via Ethernet interface.
Calibration	Auto calibration and manual calibration are possible.
Environment Setting Function	Allows setting of screen color, date/time, message language, click sound ON/OFF.
Probe Compensation Signal Output Function	Outputs a square calibration waveform signal (approx. 1 Vp-p, approx. 1 kHz) from the probe compensation signal output terminal on the front panel.
Overview Function	Shows system configuration.
Self Test Function	Allows memory test, key test, printer test, FDD/Zip drive test, SCSI test, or a Accuracy test.
Help Function	Displays help about settings.
Thumbnail	Displays the thumbnail preview window containing screen image files.

\*1 This function can be used when the Ethernet interface (option) is installed.

## 16.6 Built-in Printer (Option)

Item	Specifications
Printing System	Thermal line dot method
Dot Density	8 dots/mm
Paper Width	112 mm

## 16.7 Storage

### Built-in Storage

#### • Floppy Disk Drive

Item	Specifications
No. of Drives	1
Drive Size	3.5 inch
Capacity	720 KB/1.44 MB

#### • Zip Drive

Item	Specifications
No. of Drives	1
Capacity	100 MB/250 MB

### External Storage Interface

#### • SCSI (Option)

Item	Specifications
Standard	SCSI (Small Computer System Interface) ANSI X3.131-1986
Connector	Half - pitch 50 - pin
Connector Pin Assignments	Unbalanced (single end)

## 16.8 Keyboard and Printer Interface

Item	Specification
Connector Type	Type A connector (receptacle)
Electrical and Mechanical Specifications	Conforms to USB Rev.1.0
Supported Keyboards	104 keyboard (US) and 109 keyboard (Japanese) that conform to USB HID Class Ver.1.1
Supported Printers	ESC/P, ESC/P2, LIPS3, PCL5, and BJ (can be used on models that support the BJC-35V native commands) that support USB (USB Printer Class Ver.1.0)
Power Supply	5 V, 500 mA (per port)
Number of Ports	2

## 16.9 Auxiliary Input/Output Section

### External Trigger Input<sup>\*1</sup>/Trigger Gate input<sup>†</sup>

Item	Specifications
Connector Type	BNC
Input Bandwidth	External Trigger Input : DC to 100 MHz Trigger Gate input : DC to 50 MHz
Input Impedance	Approx. 1 M $\Omega$ , 18 pF (or Approx. 1 M $\Omega$ , 20 pF for the DL1720)
Maximum Input Voltage	$\pm 40$ V (DC + AC peak) or 28Vrms, 10 kHz or less
Trigger Level	$\pm 2$ V (5 mV measurement resolution) for the DL1740 $\pm 1$ V (5 mV measurement resolution) for the DL1720 with the $\pm 1$ V range selected $\pm 10$ V (50 mV measurement resolution) for the DL1720 with the $\pm 10$ V range selected

\*1 The EXT TRIG IN terminal also operates as an EXT CLOCK IN terminal. Specifications for external - clock input appear on section 16.3. This terminal is labeled "EXT CLOCK IN/EXT TRIG IN/TRIG GATE IN" for the DL1740 or "EXT." for the DL1720.

### Trigger Output (TRIG OUT)

Item	Specifications
Connector Type	BNC
Output Level	TTL
Output Logic	Negative logic
Output Delay Time	50 ns max.
Output Hold Time	1 $\mu$ s min. for low level, 100 ns min. for high level

### RGB Video Signal Output (RGB VIDEO OUT)

Item	Specifications
Connector Type	D-Sub 15-pin socket
Output Type	VGA compatible

### GO/NO-GO Output (NO-GO OUT, GO OUT)

Connector Type	RJ-12 modular jack
Output Level	TTL compatible
Signal	NO-GO OUT, GO OUT
Cable	Four-wire modular cable

### Power Connectors for the Probes (Option)

Number of Output	4 (or 2 for the DL1720)
Output Voltage	$\pm 12$ V
Usable Probe	FET probe 700939, Current probe 700937 and 701930, Differential probe 701920



## 16.10 Computer Interface

### GP-IB

Item	Specifications
Electrical and Mechanical Specifications	Conforms to IEEE St'd 488-1978 (JIS C 1901-1987).
Interface Functions	SH1, AH1, T5, L4, SR1, RL1, PP0, DC1, DT0, C0
Protocol	Conforms to IEEE St'd 488.2-1992.
Code	ISO (ASCII) code
Mode	Addressable mode
Address Setting	Listener and talker addresses 0 to 30 are settable.
Remote Mode Clear	Remote mode can be cleared by pressing the SHIFT key +the CLEAR TRACE key (except when local lockout has been set).

For details refer to the Communication Interface User's Manual (IM701710-17E).

### Serial (RS-232, Option)

Item	Specifications
Connector Type	Half pitch interface cable (D-Sub 9-pin plug)
Electrical Specifications	Conforms to EIA 574 Standard (EIA-232 (RS-232) Standard for 9-pin)
Connection Format	Point to point
Communication Format	Full duplex
Synchronizing Format	Start-stop asynchronous transmission
Baud Rate	1200/2400/4800/9600/19200/38400/57600

For details refer to the Communication Interface User's manual (IM0701710-17E).

### USB

Item	Specifications
Connector	Type B connector (receptacle)
Electrical and Mechanical Specifications	Conforms to USB Rev.1.0
Speed	Max. 12 Mbps
Number of Ports	1
Supported Systems	PC system supported. Models with a standard USB port that operates on Windows 98 SE or Windows 2000 (A separate driver is required for connecting to a PC.)

### Ethernet (Option)

Item	Specifications
Communication Port Number	1
Electrical-Mechanical Specifications	IEEE 802.3 standards
Transmission Method	Ethernet (100BASE-TX/10BASE-T)
Transmission Rate	Max. 100 Mbps
Communication Protocol	TCP/IP
Supported Services	FTP server, FTP client (network drive), LPR client (network printer), SMTP client (mail transmission), DHCP, DNS.
Connector Type	RJ-45 connector

## 16.11 General

Item	Specifications
Standard Operating Conditions	Ambient Temperature : 23 ±2°C Ambient Humidity : 55 ±10% RH Power Voltage and Frequency : Less than 1% of the rated voltage/frequency fluctuation
Warm-up Time	30 min. or more
Storage Conditions	Temperature : -20 to 60°C, -20 to 50°C (-J2 (built-in Zip drive) model) Humidity : 20 to 80% RH (no condensation allowed)
Operating Conditions	Temperature : 5 to 40°C Humidity : 20 to 80% RH (without a printer) 35 to 80% RH (with a printer)
Storage Altitude	3000 m or below
Operating Altitude	2000 m or below
Rated supply Voltage	100 to 120 VAC/220 to 240 VAC
Permissible Supply Voltage Range	90 to 132 VAC/198 to 264 VAC
Rated Supply Voltage Frequency	50/60 Hz
Permissible Supply Voltage Frequency	48 to 63 Hz
Fuse	250 V 4 A time lag; VDE/SEMKO/UL/CSA/SEV approved.
Maximum Power Consumption	200 VA (when the built-in printer is used)
Withstand Voltage (between power supply and case)	1.5 k VAC for 1 minute
Insulation Resistance (between power supply and case)	10 MΩ or more at 500 VDC
External Dimensions (details on next page)	220 (W) × 266 (H) × 306 (D) mm (with printer cover closed, projections excluded)
Weight (including printer)	Approx. 5.5 kg
Cooling Method	Forced air cooling, air discharged from rear
Installation Position	Horizontally (the stand can be used), vertically (cannot use the Zip drive), and no stacking.
Battery Back-up	Set-up data and internal clock are backed up by a built-in lithium battery. Battery life: Approx. 5 years (at ambient temperature of 23°C)
Accessories	<ul style="list-style-type: none"> <li>• 1 power cord</li> <li>• 400 MHz passive probes (2)</li> <li>• Electrical fuses (1) : A1352EF</li> <li>• 1 roll of printer paper (Only on models with "/B5" suffix)</li> <li>• 4 rubber pads for bottom legs : B9989EX</li> <li>• Front cover (1) : B9989FA</li> <li>• User's Manual (this manual)</li> <li>• Operation Guide</li> <li>• Communication Interface Manual</li> </ul>

Item	Specifications
Safety Standard	<p>Complying Standard EN61010-1</p> <ul style="list-style-type: none"> <li>• Overvoltage category(Installation category) II*<sup>1</sup></li> <li>• Pollution degree 2*<sup>2</sup></li> </ul>
Emission	<p>Complying Standard</p> <ul style="list-style-type: none"> <li>• EN61326 Class A, C-Tick AS/NZS 2064 (apply for 701705, 701710, 700988, 700939)</li> <li>• EN61000-3-2</li> <li>• EN61000-3-3 This product is a Class A (for industrial environment) product. Operation of this product in a domestic environment may cause radio interference in which case the user is required to correct the interference.</li> </ul> <p>Cable Requirement</p> <ul style="list-style-type: none"> <li>• External Trigger/ External Clock/Trigger Gate Input Terminal Use a BNC cable*<sup>3</sup>. Attach a ferrite core (TDK: ZCAT2035-0930A, YOKOGAWA: A1190MN) to the end of the cable on the instrument side.</li> <li>• Trigger Output Terminal Same as the above external trigger input terminal.</li> <li>• RGB VIDEO OUT Terminal Use a D-Sub 15-pin VGA shielded cable*<sup>3</sup>.</li> <li>• Serial(RS-232) Interface Connector Use an RS-232 shielded cable*<sup>3</sup> and attach a ferrite core (TDK: ZCAT2035-0930A, YOKOGAWA: A1190MN)to the end of the cable on the instrument side.</li> <li>• SCSI Connector Use a SCSI shielded cable*<sup>3</sup> and attach a ferrite core (TDK: ZCAT2035-0930A, YOKOGAWA: A1190MN) to the end of the cable on the instrument side.</li> <li>• PRN/KBD Connector Use a USB cable*<sup>3</sup>. Attach a ferrite core (TDK: ZCAT1325-0530A, YOKOGAWA: A1181MN) to the end of the cable on the instrument side.</li> <li>• USB Interface Connector Use a USB cable*<sup>3</sup>. Attach a ferrite core (TDK: ZCAT1325-0530A, YOKOGAWA: A1181MN) to the end of the cable on the instrument side.</li> <li>• GO/NO-GO Output Terminal Use a GO/NOGO cable (YOKOGAWA model 366973, sold separately). Attach a ferrite core (TDK: ZCAT1325-0530A, YOKOGAWA: A1181MN) to the end of the cable on the instrument side.</li> <li>• Ethernet Connector Use a Ethernet cable*<sup>3</sup>. Attach a ferrite core (TDK: ZCAT1325-0530A, YOKOGAWA: A1181MN) to the end of the cable on the instrument side.</li> <li>• Power Connectors for the Probes Attach a ferrite core (TDK: ZCAT1325-0530A, YOKOGAWA: A1181MN) to the end of the cable on the instrument side.</li> </ul>
Immunity*1	<p>Complying Standard EN61326 Industrial environment(apply for 701705, 701710, 700988, 700939)</p> <p>Influence in the Immunity Environment</p> <ul style="list-style-type: none"> <li>• Noise Increase <ul style="list-style-type: none"> <li>· <math>\leq \pm 80</math> mV, when using 700988</li> <li>· <math>\leq \pm 400</math> mV, when using 700939</li> </ul> </li> <li>• Test Condition <ul style="list-style-type: none"> <li>When using 700988 500 MS/s, envelope mode, 20 MHz BWL, input coupling: 1 MW, 20 mV/div (probe attenuation setting: 10:1), terminate the probe at 50 MW.</li> <li>When using 700939 500 MS/s, envelope mode, 20 MHz BWL, input coupling: 50 MW, 100 mV/div (probe attenuation setting: 10:1), terminate the probe at 50 MW. Attach a ferrite core (TDK: ZCAT2035-0930A, YOKOGAWA: A1190MN) to each end of the signal cable.</li> </ul> </li> <li>• Cable Requirement Same requirement as above for emission.</li> </ul>

\*1 "Overvoltage category(Installation category)" describes a number which defines a transient overvoltage condition. It implies the regulation for impulse withstand voltage. "II" applies to electrical equipment which is supplied from the fixed installation like distribution board.

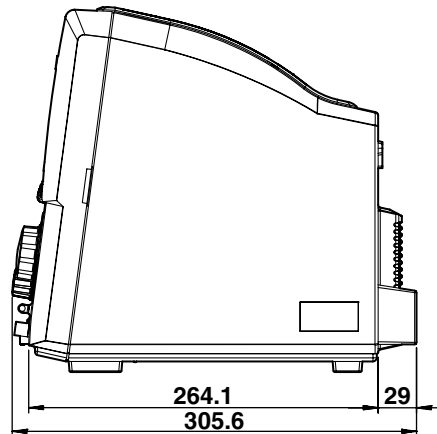
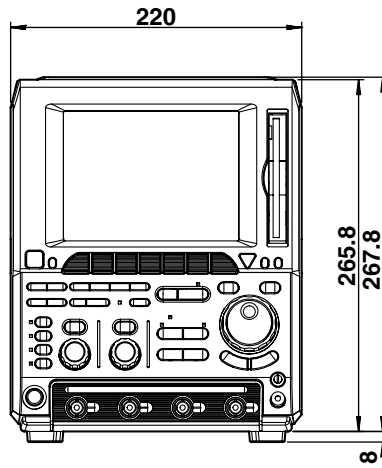
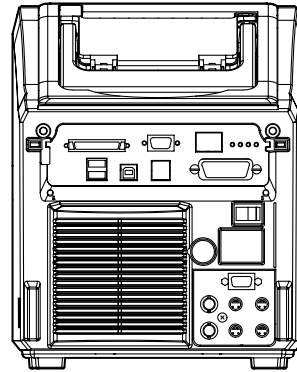
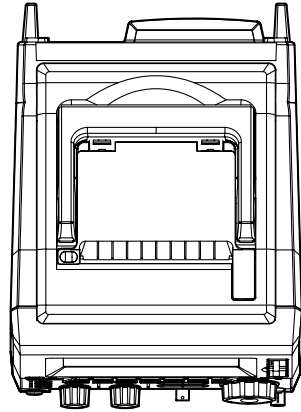
\*2 "Pollution degree" describes the degree to which a solid, liquid, or gas which deteriorates dielectric strength or surface resistivity is adhering. "2" applies to normal indoor atmosphere. Normally, only non-conductive pollution occurs.

\*3 The cable length is less than 3 m.

## 16.12 External Dimensions

Dimensions: mm

**Rear View**



Unless otherwise specified, tolerance is  $\pm 3\%$ .

(Tolerance is always  $\pm 0.3$  mm when the dimension is under 10 mm.)