SL1000
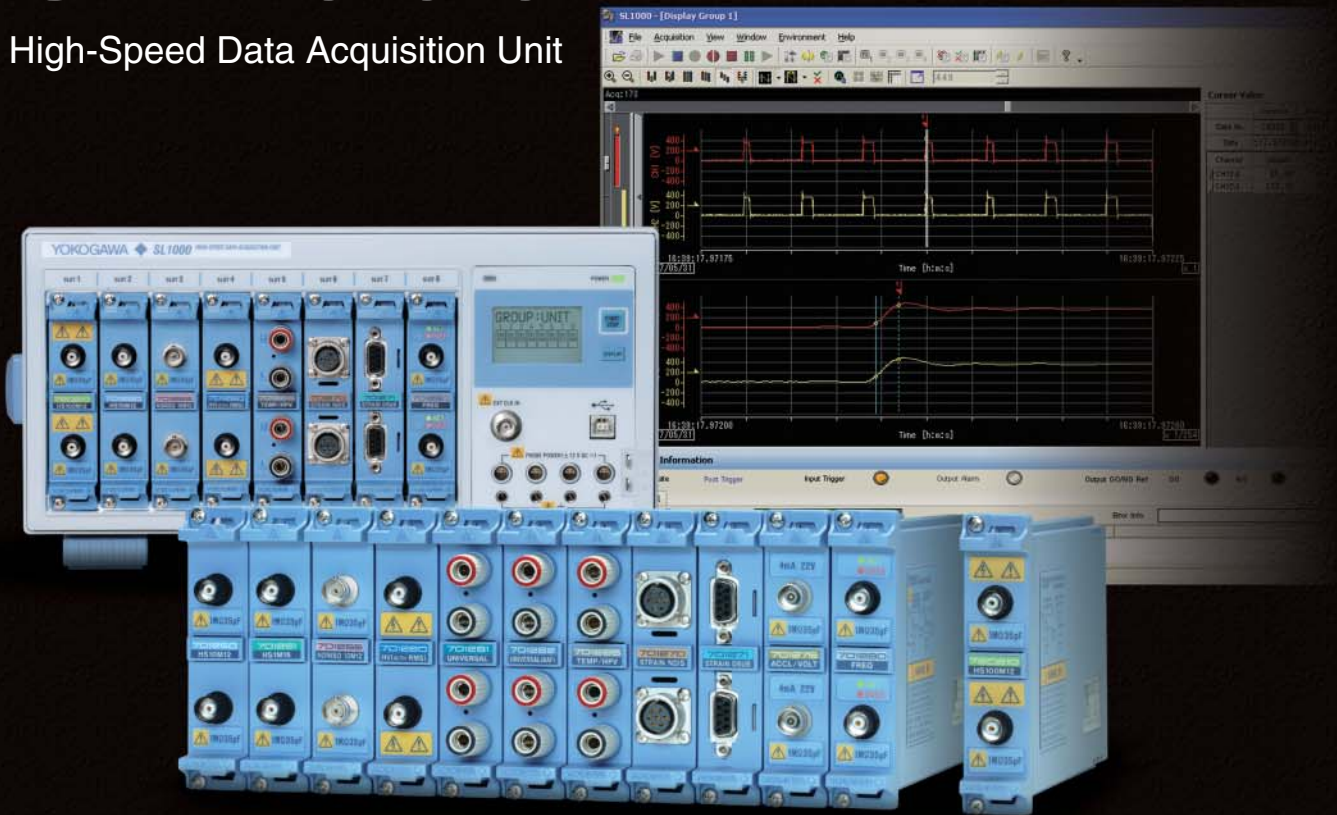
High-Speed Data Acquisition Unit

NEW

Maximum sample rate

100 MS/s ×16 ch

Maximum sample rate 100 MS/s12bit

isoPRO™

Isolated Inputs

3-Year Warranty   CE

Fast Acquisition, Transfer, and S torage
Finally, a No-Compromise, High-P erformance Data Acquisition Unit

Selecting a data acquisition platform for your electronics or mechatronics application has always been a balancing act. High speed digitizers lack the isolation, attenuation, or bit resolution necessary for power electronics testing. PC-based platforms with fast streaming throughput sacrifice noise immunity, signal conditioning, and hardware integrity.
Until now. The new Yokogawa SL1000 is the only data acquisition system that delivers independent, isolated channel hardware at 100MS/ch rates, with no compromise in bit resolution, memory depth, or streaming performance.

Fast Acquisition

– Up to 100 MS/s on all channels (10 ns sampling interval)
– New 100 MS/s 12-Bit 1 kV* isolation module with 20 MHz bandwidth **NEW**
– Supports parallel testing: Perform measurements with up to four simultaneously independent sample rates
*: In combination with 10:1 probe (for isolated BNC input) model 700929

Fast Transfer and Storage

– Stream data to PC via high speed USB 2.0 or 1000BASE-T Gigabit Ethernet*1
– Real time display on a PC (GIGAZoom engine)*2
– Stream data to a PC hard disk or the SL1000's internal hard disk*1 in real time (at speeds of 1.6 MS/s = 100 kS/s × 16ch)*2
*1: optional
*2: Speed depends on PC performance and measuring conditions.

Easy to use

– Easy to use Standard Acquisition Software
– Quick and Intuitive operation means that you can start measuring immediately
– Setup Wizard guides you through detailed settings

Can operate "Standalone"

– Store data directly on the SL1000

Wide Library of Plug-In Modules

– Eight module slots are available in each unit
– Select now from twelve different plug-in modules

## High-Speed Data Acquisition Unit SL1000

High-Speed — Hardware —

High-Speed Capture

In the pursuit of isolated high-speed waveform measurement, Yokogawa has achieved a maximum sample rate of 100 MS/s (10 ns sampling interval). The SL1000 can accurately capture high-speed and high-voltage phenomena by using the newly developed 100 MS/s 12-Bit 20 MHz frequency range 1-kV* Isolation Module (model 720210).
Furthermore, you can combine modules that support measurements of a variety of signals, giving you solutions for an extensive range of applications.
*: In combination with 10:1 probe (for isolated BNC input) model 700929

High sample rate (100 MS/s)
20 MHz bandwidth

High speed phenomena

Waveform accurately captured
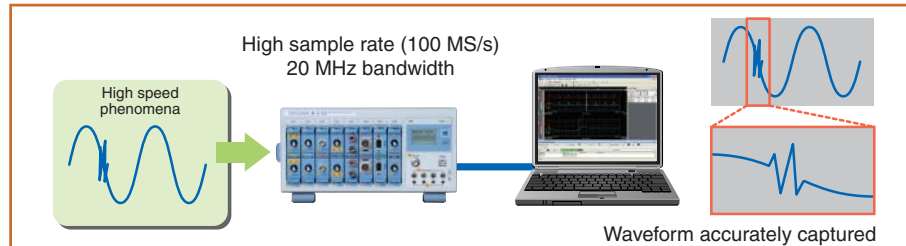
Saving Data over Long Periods of Time

Data can be saved to the SL1000's internal acquisition memory over long durations, or it can also be streamed in real-time to a PC hard disk or the SL1000's internal hard disk[1][2].
*1: with the /HD1 Option *2: Maximum speed of real time hard disk recording depends on measuring conditions.
*3: Trigger mode: Single, measuring on 1 module, 2 channels.

Sample Rate	Maximum Recording Time[3]
100 MS/s	0.5 seconds
10 MS/s	5 seconds
1 MS/s	50 seconds
100 kS/s	8 minutes 20 seconds
10 kS/s	1 hour 23 minutes 20 seconds
1 kS/s	13 hours 53 minutes 20 seconds
500 S/s	1 day 3 hours 46 minutes 40 seconds

- Amount of time data can be recorded with internal memory

Supports parallel testing

Perform measurements with up to four simultaneously independent sample rates. The amount of data saved on hard disk can be reduced by optimizing the sample rate for the DUT on a module by module basis.

Example Setup

4 sample rates

High-Speed Data Transfer & GIGAZoom Function for Instantaneous Full-Length Display of Large Quantities of Data

You can transfer data to PCs at high speed via USB 2.0 or Ethernet 1000BASE-T Gigabit Ethernet[1]. The SL1000's high-speed data compression engine (GIGAZoom engine) displays waveforms on the PC in real time[2]. It offers the same display updating and zooming performance as standalone measuring instruments, even with massive amounts of data at high sample rates.
*1: with the /C10 Option
*2: The number of channels from which waveforms can be displayed during measurement may be limited depending on the PC performance and measuring conditions.

Real Time Saving to Hard Disk

Continuously measured data can be saved in real time to a PC hard disk and/or the SL1000's internal hard disk[1]. File names are assigned automatically, freeing you from time consuming file operations. Data can be saved simultaneously-- and in real time--to both the PC's and SL1000's hard disks[1]. This bolsters the reliability of your data storage system, protecting your vital data. You can access the SL1000's internal hard disk[1] with Xviewer waveform viewer software (comes standard), or through an FTP client over Ethernet[2].
*1: with the /HD1 Option *2: with the /C10 Option
*3: Typical values. Actual values depend on PC performance and measurement conditions.

Settings for the Hard Disk Recording Function

By specifying recording criteria, you can efficiently and automatically record only the data you need to the hard disk. Just specify the recording destination, recording start and stop conditions, conditions for repeating recording, and other criteria. With free run measurement, the specifiable parameters for the recording start condition are immediate, time, and alarm; for the recording stop condition, the parameters are continuous, time, recording time, and alarm; and for the repeating condition, recording interval and number of recordings`. With triggered measurement, measured data is recorded upon each trigger. You can also manually save data from the SL1000's internal acquisition memory to PC hard disk.
*: Max. file size per recording is 12 GB (recording on 4 channels, ≒ 1.5 GW/ch)
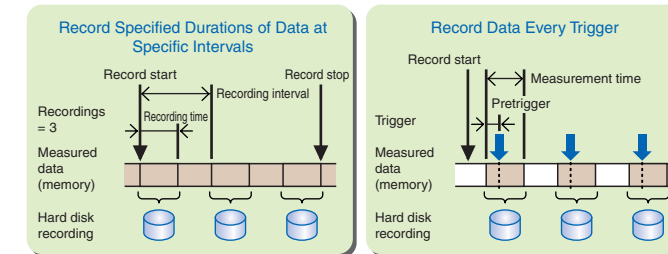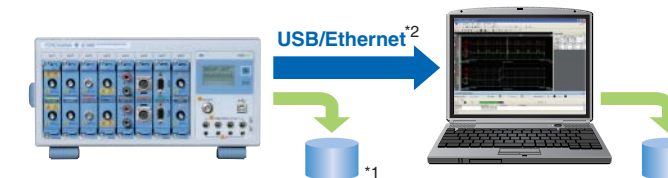
PC monitor display (triggered measurement)

Real time full-length display

Zoom display
Instantaneous display, whether stopped or running
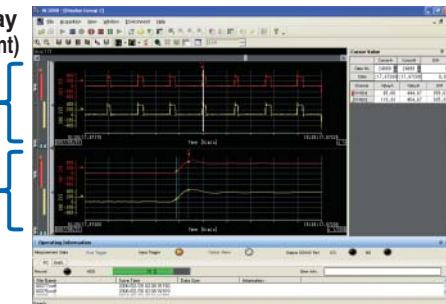
Maximum speed for saving in real time[3]

PC hard disk : 1.6 MS/s = 100 kS/s × 16ch
SL1000 internal hard disk[1]: 1.6 MS/s = 100 kS/s × 16ch

USB/Ethernet[2]

*1

Record Specified Durations of Data at Specific Intervals

Record start   Record stop

Recordings = 3

Recording time   Recording interval

Measured data (memory)

Hard disk recording

Record Data Every Trigger

Record start

Measurement time

Pretrigger

Trigger

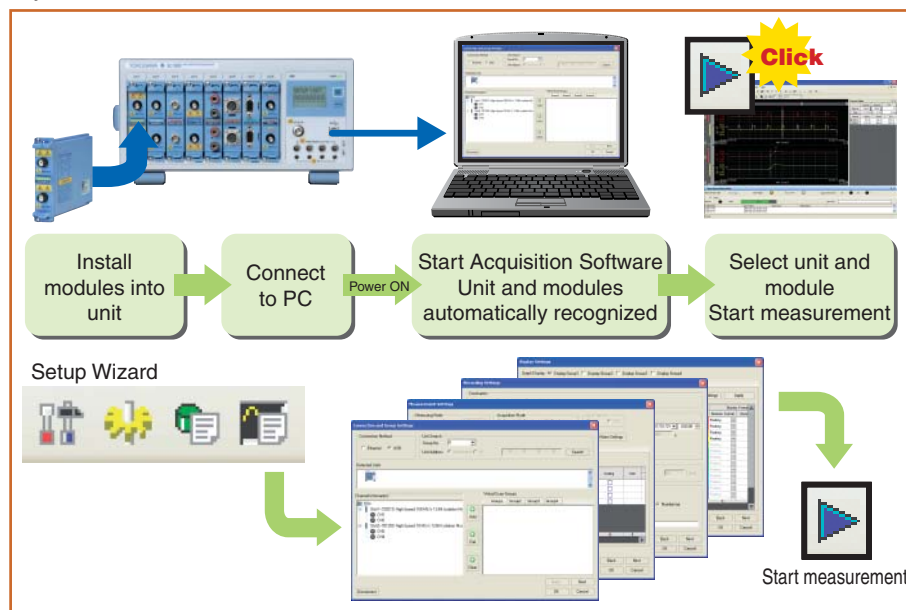Measured data (memory)

Hard disk recording

Easy to use — Software —

Intuitive, User-Friendly Acquisition Software

### Setup Wizard Makes It Easy

The Wizard automatically recognizes any connected SL1000 and its' plug-in modules. Just click the Start button to start measuring right away--no complicated settings to enter. The four screens of the Setup Wizard guide you easily through detailed settings for configuring the system, measuring, saving and displaying. Of course, you can save and recall your settings at any time.

Click

Install modules into unit	→	Connect to PC	→	Start Acquisition Software Unit and modules automatically recognized	→	Select unit and module Start measurement
		Power ON				

Setup Wizard

Start measurement

High-Speed Data Acquisition Unit
SL1000

- **Fast Acquisition**
  Up to 100 MS/s on all channels
  10 ns sampling interval
  New: 100 MS/s 12-Bit isolation module
  Supports parallel testing
- **Fast Transfer and Storage**
  USB 2.0 or 1000BASE-T (optional)
  Real time display on a PC
   (GIGAZoom engine)
  Save data to a hard disk in real time
- **Easy to use**
  Standard Acquisition Software
  Plug and Play: Auto-recognition of units and modules
  Quick and Intuitive operation
  Setup Wizard guides you through detailed settings
- **Analysis Functions**
  Real time waveform analysis
 Offline waveform computation (optional)

Individual Sample Rates for Each Measurement Channel Group

Up to four groups of measurement channels can be defined with individual measurement conditions and display settings. Even waveforms from groups with different sample rates can be displayed in the same window.
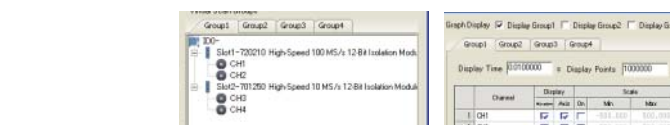
Easy Tabular Setup Screens

Measurement conditions and channel display settings can be viewed and set easily using a tabular format. Use drag and drop shortcuts to quickly setup multiple channels.

(Left) Measurement condition setting screen
(Right) Display setting screen
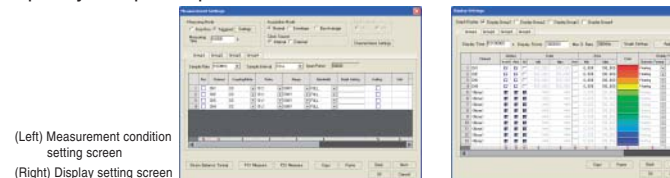
Control Buttons--Just Like Your DVD Remote

Measurement and saving can be started and stopped using the same familiar buttons found on a DVD remote control. Start using the instrument on the same day you receive it, with absolutely no programming required.

Control Buttons

Record start/Divide/Stop

Measurement start/stop   Display hold /restart
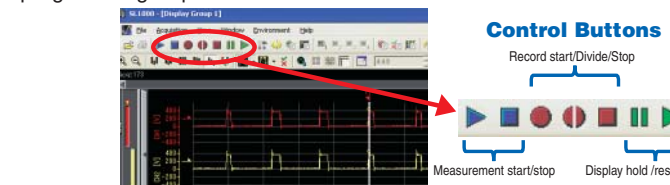
Real Time Waveform Display and Analysis

You can display a zoomed portion of the waveform simultaneously with the overall waveform during triggered measurement. Even during live recording, you can use the display hold* to review past data. You can also perform cursor measurements or automated measurement of waveform parameters (up to 26 during triggered measurement) in real time.
*: The display hold may automatically switch to display resume depending on the measuring conditions.

Xviewer Waveform Viewer Software (1 License of the Standard Version Comes Standard)*

Offline Waveform Display & Data Conversion

Waveform data saved to hard disk can be manipulated on the PC in the same manner as in real time for waveform display, cursor measurement, automated measurement of waveform parameters, and X-Y display. Additionally, you can input comments anywhere in the displayed waveform window for printing. Waveform data can also be converted to CSV or Excel formats for use in spreadsheet programs.

Offline Waveform Computation (with the /XV1 Option)

You can define and display up to ten computed waveforms. In addition to basic arithmetic operations, you can use a variety of other functions in your definitions such as trigonometric functions, derivatives and integrals, pulse width computations, and FFTs.
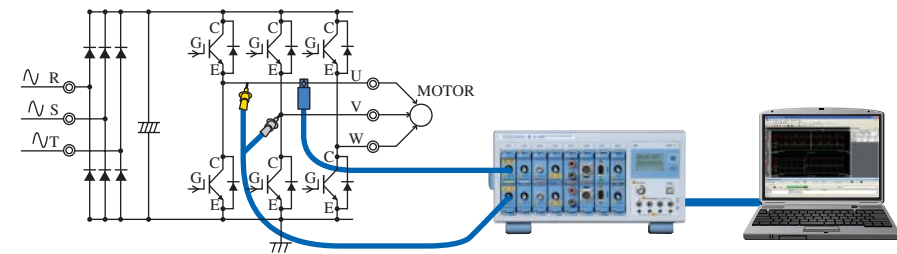
Define waveform equations using a number of basic and advanced functions.
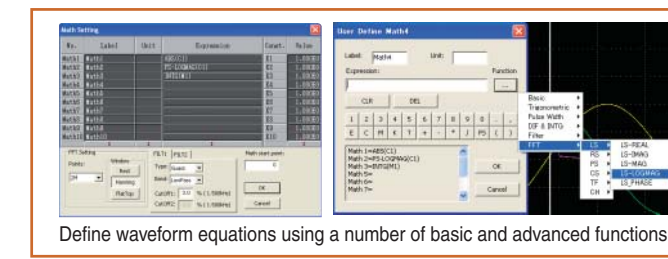
*: For detailed specifications, see the Xviewer catalog.

Applications

Observation of Inverter Switching Waveforms

Inverter switching waveforms can be observed using the newly developed High-Speed 100 MS/s 12-Bit Isolation Module, offering more accurate waveform capture.

MOTOR

Line voltage is measured by 100MS/s 12-bit isolation module and 10MS/s 12-bit isolation module.
Limited time resolution at 10MS/s (yellow line). High time resolution at 100MS/s (red line).
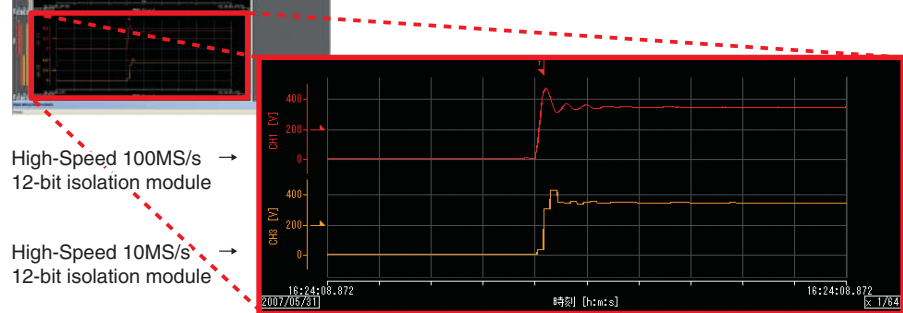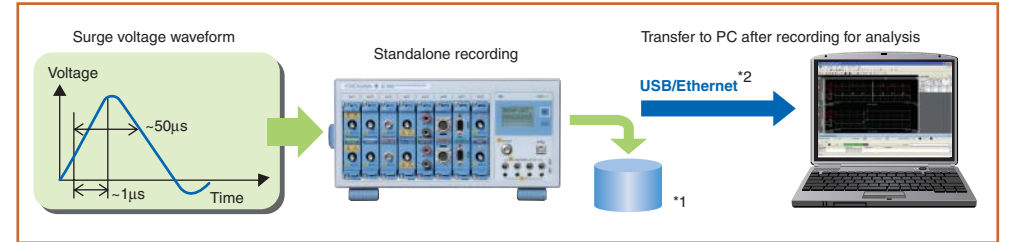
High-Speed 100MS/s →
12-bit isolation module

High-Speed 10MS/s →
12-bit isolation module

Surge Waveform Recording & Power Monitoring

You can observe and record waveforms of noise (surge) that is imposed upon power supply and signal lines when the power switch is turned ON and OFF, or due to lightning and other external events. Taking advantage of the SL1000's high speed, high resolution, isolation, and standalone characteristics, you can check and automatically record voltage waveforms during monitoring and surge immunity testing.

Surge voltage waveform

Standalone recording

Transfer to PC after recording for analysis

Voltage

~50µs

~1µs   Time

USB/Ethernet *2

*1

Acquisition of Explosion and Combustion Data

The SL1000 has the high speed and high resolution required for use in the performance evaluation of rockets, airbags, and other combustion-related applications. Measured data can also be saved to both the PC's hard disk and the SL1000's internal hard disk[1]. This bolsters the reliability of your data storage system. Standalone measurement or remote data acquisition via Ethernet[2] is also possible.

Shock waveform

Recorded to both

Pressure

Time

USB/Ethernet *2

*1
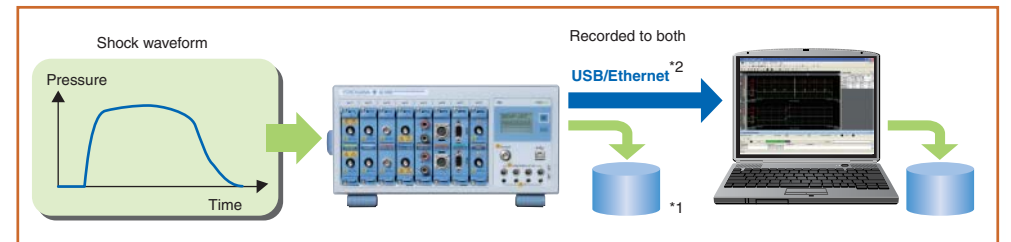
*Standalone Operation

Once settings are entered, the SL1000 can be used "standalone". You can start and stop measurement and recording by using the START/STOP key on the SL1000 or by using the REMOTE input. The instrument includes a convenient LCD for display during standalone use. The LCD shows you the system status, module status, communication parameters, and other information.

Setting

Standalone Operatipn

START/STOP key

GROUP·UNIT

LCD

*1
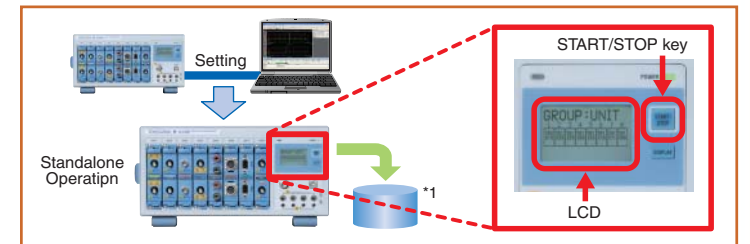
*1: with the /HD1 Option *2: with the /C10 Option

Modules

Modules for a Wide Variety of Signals and Sensors

Supports a total of 12 different ScopeCorder series modules, including the newly developed High-Speed 100 MS/s 12-Bit Isolation Module, enabling correlated measurements of high speed voltage, high voltage, high voltage accuracy, temperature, strain, acceleration, frequency, and other characteristics.

NEW

High-speed 100 MS/s 12-Bit Isolation Module (2CH, Model 720210) Specifications *Specific to the SL1000

Input channels	2
Input coupling	AC, DC, GND
Maximum sample rate	100 MS/s
A/D conversion resolution	12-bit (1,500 LSB/range)
Input type	Isolated unbalanced
Frequency range (-3 dB)	DC-20 MHz
Input range (10:1)	1 V-2 kV (steps of 1-2-5)
(1:1)	100 mV-200 V (steps of 1-2-5)
Effective measuring range	2 times the setting range
Maximum input voltage (1 kHz or less)	
In combination with 700929 (10:1)	1000 V (DC + ACpeak)
Direct input (1:1)	200 V (DC + ACpeak)
Maximum allowable common mode voltage (1 kHz or less)	
In combination with 700929 (10:1)	1000 Vrms (CATII)
Main unit only (1:1)	42 V (DC+ACpeak)
DC accuracy	± (0.5% of range)
Input impedance	1 MΩ ±1%, approximately 35 pF
Connector type	Isolated type BNC connector
Input filter	OFF/2 MHz
Temperature coefficient	
Zero point	± (0.1% of range)/°C (typ.)
Gain	± (0.02% of range)/°C (typ.)
Laser safety standards	class 1 (IEC 60825-1)

— Equipped with **iSoPRO**™, a High-Speed & High-Voltage Isolation Technology —

This is Yokogawa's latest technology that achieves high voltage isolation performance where high-speed high-resolution measurement is required.
It takes you to a new stage in measurement with high-speed high-voltage isolation performance.

Module Selection

Input	Model No.	Description	Sample Rate	Resolution	Bandwidth	Number of Channels	Isolation	Maximum Input Voltage (DC+ACpeak)	DC Accuracy	Note
Analog Voltage	720210	High-speed 100 MS/s 12-Bit Isolation Module (2 ch)	100 MS/s	12-Bit	20 MHz	2	Isolated	1000 V*1 200 V*2	±0.5%	SL1000 exclusive use NEW
	701250*4	High-speed 10 MS/s 12-Bit Isolation Module (2 ch)	10 MS/s	12-Bit	3 MHz	2	Isolated	600 V*1 250 V*2	±0.5%	high noise immunity
	701251	High-speed 1 MS/s 16-Bit Isolation Module (2 ch)	1 MS/s	16-Bit	300 kHz	2	Isolated	600 V*1 140 V*2	±0.25%	High sensitivity range (10 mV), low noise (±100 µVtyp), and high noise immunity
	701255*4	High-speed 10 MS/s 12-Bit non-Isolation Module (2 ch)	10 MS/s	12-Bit	3 MHz	2	Non-isolated	600 V*3 250 V*2	±0.5%	non-isolation version of model 701250
	701260	High-voltage 100 kS/s 16-Bit Isolation Module (with RMS, 2 ch)	100 kS/s	16-Bit	40 kHz	2	Isolated	1000 V*1 850 V*2	±0.25%	with RMS, and high noise immunity
Temperature	701261	Universal Module (2 ch)	100 kS/s (Voltage), 500 S/s (Temperature)	16-Bit (Voltage), 0.1°C (Temperature)	40 kHz (Voltage) 100 Hz (Temperature)	2	Isolated	42 V	±0.25% (Voltage)	thermocouple (K, E, J, T, L, U, N, R, S, B, W, iron-doped gold/chromel)
	701262	Universal Module (with Anti-Aliasing Filter, 2 ch)	100 kS/s (Voltage), 500 S/s (Temperature)	16-Bit (Voltage), 0.1°C (Temperature)	40 kHz (Voltage) 100 Hz (Temperature)	2	Isolated	42 V	±0.25% (Voltage)	thermocouple (K, E, J, T, L, U, N, R, S, B, W, iron-doped gold/chromel), with AAF
	701265	Temperature/high-precision voltage Module (2 ch)	500 S/s (Voltage), 500 S/s (Temperature)	16-Bit (Voltage), 0.1°C (Temperature)	100 Hz	2	Isolated	42 V	±0.08% (Voltage)	thermocouple (K, E, J, T, L, U, N, R, S, B, W, iron-doped gold/chromel), high sensitivity range (1 mV), and low noise (±4 µVtyp)
Acceleration	701275	Acceleration / Voltage Module (with Anti-Aliasing Filter, 2 ch)	100 kS/s	16-Bit	40 kHz	2	Isolated	42 V	±0.25% (Voltage) ±0.5% (Acceleration)	built-in anti-aliasing filter, Supports built-in amp type acceleration sensors (4 mA/22 V)
Strain	701270	Strain module (NDIS, 2 ch)	100 kS/s	16-Bit	20 kHz	2	Isolated	10 V	±0.5% (Strain)	Supports strain NDIS, 2,5, 10 V built-in bridge power supply
	701271	Strain module (DSUB, Shunt-CAL, 2 ch)	100 kS/s	16-Bit	20 kHz	2	Isolated	10 V	±0.5% (Strain)	Supports strain DSUB, 2,5, 10 V built-in bridge power supply, and shunt CAL
Frequency	701280	Frequency Module (2 ch)	25 kS/s	16-Bit	resolution 50 ns	2	Isolated	420 V*1 42 V*2	±0.1% (Frequency)	Measurement frequency of 0.01 Hz to 200 kHz, Measured parameters (frequency, rpm, period, duty, power supply frequency, distance, speed)

* Probes are not included with any modules.
*1: In combination with 10:1 probe (for isolated BNC input) model 700929
*2: Direct input
*3: In combination with 10:1 probe (for isolated BNC input) model 701940
*4: Some of the models 701250/701255 shipped on or before July, 2007 may require factory rework.

– Can operate "Standalone"
Store data directly on the SL1000
– A wide range of Plug-In Modules
8 module slots are available in each unit
New: 100 MS/s 12-Bit isolation module
Supports all 11 ScopeCorder series modules
Select now from 12 different plug-in modules

High-Speed Data Acquisition Unit

SL1000

Main Specifications (SL1000 Main Unit)

### Basic Specifications

Input format	Plug-in module (A/D converters built in to each unit)
Number of slots	8
Max number of channels	16
Maximum sample rate[*1]	100 MS/s on all channels
Max. recording length (internal memory)	
	50 MW/ch (trigger mode: Single, measuring on 1 module, 2 channels)
Build-in hard disk	40 GB (with /HD1 option)
Maximum speed for saving in real time	
Build-in hard disk	1.6 MS/s (=100 kS/s × 16ch, with /HD1 option)[*2]
Signal I/O	External clock input :BNC × 1
	External trigger input :BNC × 1
	Trigger output :BNC × 1
	Alarm output :Screwless terminal × 1
	GO/NO-GO output :Screwless terminal × 1
	REMOTE input :Screwless terminal × 1
Probe power terminal	Supplies up to 4 probes (with /P4 option)
USB communication	Conforms to USB Revision 2.0
Ethernet	1000 BASE-T compliant (with /C10 option)

General Specifications

Rated supply voltage	100-120 VAC/220-240 VAC (switches automatically)
Rated supply frequency	50/60 Hz
Power consumption	300 VA max (including modules)
External dimensions	319 mm (W) × 154 mm (H) × 350 mm (D), excluding protrusions
Weight	Approx. 6 kg (SL1000 main unit only)
Operating temperature range	5-40°C

*1: Maximum sample rate differs depending on the type of module.
If the sampling frequency exceeds the maximum sample rate of the module, identical data will be recorded.
*2: Typical values. Actual values depend on measurement conditions.

Main Specifications (Acquisition Software is Standard)

Plug and Play	Auto-recognition of units and modules
Measurement modes	Freerun and triggered
ACQ mode	Normal, envelope, and box average
Clock sources	Internal and external
Measurement groups	Up to 4 groups definable with independent sample rates
Trigger modes	Normal, single, and single(N)
Trigger sources	CH1-CH16, LINE, Time, and External
Other trigger functions	Combination trigger, hold-off, pretriggers, and trigger delay
Save conditions	Manual operation, or based on time, or alarms
Other save functions	Manual save (file division), specify no. of saves, and save all data in memory
	Save simultaneously to PC's hard disk and SL1000's internal hard disk (with /HD1 option)
Save format	Binary data files (original, *.wdf)
Waveform data conversion (Xviewer)	Binary data file(s) can be converted to ASCII (*.csv) or Excel (*.xls) format
Maximum speed for saving in real time	
PC hard disk	1.6 MS/s (= 100 kS/s × 16 ch)[*1]
Waveform monitor	Trend display (displays measured waveforms of different sample rates simultaneously)[*2],
	and instantaneous value displays (digital, bar graph, meter, and thermometer)
Display groups	Up to 4 display groups
Other display functions	History waveform, arbitrary axis divisions,
	and horizontal axis scaling + specifiable units (ext. clock)
Waveform analysis	Cursor and parameter measurement[*3]
Offline waveform computation (with /XV1 option)	
Max. Number of displayed waveforms (CHs)	
	10 waveforms (Math1 to Math 10)
Operations	+, -, ×, /, trigonometry, differentiation/integration, FFT, and others
Alarms	Channel (alarm display and alarm history analysis)[*4],
	system, and alarm output
GO/NO-GO determination[*3]	Waveform parameter judgment and judgment output
System requirements	
OS	Windows 2000 (SP4 or later)/Windows XP (SP2 or later)
CPU	Pentium 4, 2 GHz or faster (3.2 GHz or faster recommended)
Memory	512 MB or more (1 GB or more recommended)
Hard disk	500 MB or more of free space (40 GB or more recommended)
Communication interfaces	USB 2.0/Ethernet 1000 BASE-T (with /C10 option)

*1: Typical values. Actual values depend on PC performance and measurement conditions.
*2: When the measurement mode is Freerun, the trigger mode is Single(N), and the number of measurements is Infinite, there may be a limit to the number of channels that can be trend-displayed during measurement.
*3: Triggered measurement *4: Freerun measurement

Exterior Dimensions
(Unit: mm)

Rear View
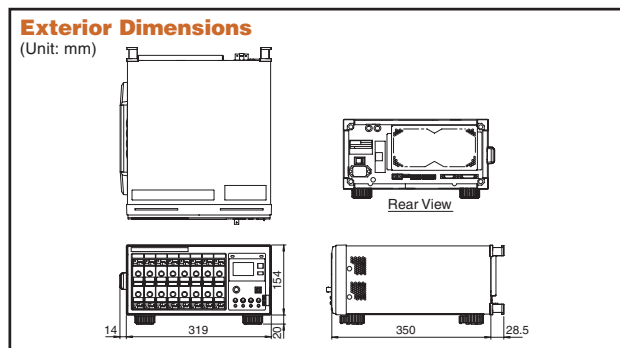
SL1000 Model Number and Suffix Codes

Model/Options	Suffix Code	Description
720120		SL1000 High-Speed Data Acquisition Unit[*1]
		Including Xviewer Standard Edition (1 license)(701992-SP01)
Power cable	-D	UL and CSA standard
	-F	VDE standard
	-R	AS standard
	-Q	BS standard
	-H	GB standard (Complied with CCC)
Others	/HD1	Internal 40 GB hard drive
	/C10	Ethernet Interface
	/P4	Probe power (4-output)
	/XV0	Without Xviewer[*2]
	/XV1	With the Xviewer Math Edition (1 license)(701992-GP01)

*1: Plug-in modules and PC not included with the SL1000.
*2: Xviewer required to access the internal hard disk with a USB connection.

Standard Accessories

Product	Order Q'ty
Power cable	1
Acquisition Software, Xviewer (701992)(CD-ROM)	1
User's manuals (one set)	1
Cover panels (for blank module slots)	8
Rubber feet (two per set)	1
Soft case (for storing accessories)	1

Probes, Cables, and Converters

Product	Model No.	Description[*1]
10:1 Probe (for Isolated BNC Input)	700929	1000 Vrms-CAT II
1:1 Safety BNC Adapter Lead (in combination with followings)	701901	1000 Vrms-CAT II
Safety Mini-clip (Hook Type)	701959	1000 Vrms-CAT II, 1 set each of red and black
Large Alligator-Clip (Dolphin type)	701954	1000 Vrms-CAT II, 1 set each of red and black
Alligator Clip Adaptor Set (Rated Voltage 1000V)	758929	1000 Vrms-CAT II, 1set each of red and black
Alligator Clip Adaptor Set (Rated Voltage 300V)	758922	300 Vrms-CAT II, 1set each of red and black
Fork Terminal Adaptor Set	758921	1000 Vrms-CAT II, 1 set each of red and black
Passive Probe[*2]	701940	Non-isolated 600 Vpk (701255)(10:1)
1:1 BNC-Alligator Cable	366926	Non-isolated 42 V or less, 1 m
1:1 Banana-Alligator Cable	366961	Non-isolated 42 V or less, 1.2 m
Current Probe[*3]	701933	30 Arms, DC to 50 MHz, supports probe power
Current Probe[*3]	701930	150 Arms, DC to 10 MHz, supports probe power
Current Probe[*3]	701931	500 Arms, DC to 2 MHz, supports probe power
Probe Power Supply[*4]	701934	Large current output, external probe power supply (4 outputs)
Shunt Resistor for Clamped Input Terminal	438920	250 Ω ±0.1%
Shunt Resistor for Clamped Input Terminal	438921	100 Ω ±0.1%
Shunt Resistor for Clamped Input Terminal	438922	10 Ω ±0.1%
Bridge Head (NDIS-120 Ω)	701955	With 5 m cable
Bridge Head (NDIS-350 Ω)	701956	With 5 m cable
Bridge Head (DSUB-120 Ω, Shunt-CAL)	701957	With 5 m cable
Bridge Head (DSUB-350 Ω, Shunt-CAL)	701958	With 5 m cable
BNC Conversion Adaptor	758924	500 Vrms-CAT II
Safety BNC-BNC Cable (1 m)	701902	1000 Vrms-CAT II (BNC-BNC)
Safety BNC-BNC Cable (2 m)	701903	1000 Vrms-CAT II (BNC-BNC)

*1: Actual allowable voltage is the lower of the voltages specified for the main unit and cable.
*2: 42 V is safe when using the 701940 with an isolated type BNC input.
*3: The number of current probes that can be powered from the main unit's probe power supply is limited. For details, please refer to http://www.yokogawa.com/tm/pdf/bu/701933/tm-701933_01.pdf.
*4: Any number of externally powered probes can be used.

* isoPRO is the whole trademark application.
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NOTICE
● Before operating the product, read the user's manual thoroughly for proper and safe operation.
● If this product is for use with a system requiring safeguards that directly involve personnel safety, please contact the Yokogawa sales offices.