

LX-100 Series Specification																
Input Amp Type		DC Input Amp (AR-LXDC100)					PA Input Amp (AR-LXPA100)					Strain Input Amp (AR-LXST100)				
I/O Type		Input		Input and Output			Input		Input and Output			Input		Input and Output		
Channels		8ch	16ch	32ch	8ch	16ch	8ch	16ch	32ch	8ch	16ch	8ch	16ch	32ch	8ch	16ch
Weight		3.6/7.9	3.9/8.6	6.1/13.4	3.9/8.6	6.1/13.4	3.6/7.9	3.9/8.6	6.1/13.4	3.9/8.6	6.1/13.4	3.6/7.9	3.9/7.9	6.1/13.4	3.9/8.6	6.1/13.4
Approx (kg/lb)		LX-110	LX-120	LX-120	LX-110	LX-120	LX-110	LX-120	LX-120	LX-110	LX-120	LX-110	LX-120	LX-110	LX-120	LX-120
Power Consumption(W)		36	42	56	36	42	41	52	76	46	66	46	62	92	62	92
Sampling Frequencies LX-110 LX-120		96 / 48 / 24 / 12 / 6 / 3 / 1.5 kHz (Common to each Channel)														
Sampling Frequencies LX-120 only		102.4 / 51.2 / 25.6 / 12.8 / 6.4 / 3.2 kHz														
Tachometer Pulse Input LX-120 only		Num. of Input Channels : 12 x 16 bit Channels, 2 x 32 bit Channels (Highest sampling frequency settings support the moving average only at one(1)) (Cannot be used simultaneously with generator output) Use the lowest 1bit for tachometer pulse timing bit. Input Format : Threshold level selections +0.5/1/2.5/10/20 V (Max allowable input voltage is 50V) Input Connector : BNC Frequency Division Ratio Setting : 1 to 255 Moving Average Measurement : 1 to 16 Measurement Mode : Pulse count mode (Count of number of pulses within the gate time; Count of the total number from start to stop), Cycle count mode, Frequency measurement mode, RPM mode														
Generator Output LX-120 only		Num. of Output Channels : 1 Output signal : Sine wave, Sweep Sine wave, Pulse, Pink noise, White noise														
Input Channel change		2 / 4 / 8 / 16 / 24 / 32 ch														
Recording Devices		Choice of Memory only, Memory + PC card drive * PC card is Flash memory, supports up to 8GB capacity (FAT16 or FAT32) Choice of 100BASE-TX or Firewire (IEEE1394) (Specify one when you order)														
Interface		REC, FWD, REC FWD, STOP, PAUSE, EVENT, P LOCK														
Front Panel Control Keys		1 (analog output), BNC														
Monitor Channel		+/- 1 to 5 V (0.1 V step)														
Monitor output level		1														
Microphone Jack		1 each														
Speaker and Earphone Jack		Memory Approx. 1.6 MB/s, PC card Approx. 0.8 MB/s														
MAX. Recording Rate		Firewire (IEEE1394) Approx. 1.6 MB/s, Ethernet Approx. 0.8 MB/s														
PC Throughput		+/- 1 ppm (25 deg C)														
Time Precision		0 to 45 deg C, Humidity 10 to 85%RH (Operation)														
Temperature and Humidity		+/- 30 seconds adjustment														
Internal Clock Correction		11 to 30 V DC														
Power Supply		CE, VCCI														
Safety Standards		Conforms to MIL-STD-810 Figure 514.4-1,2,3 for the models with memory only memory + PC card drive														
Vibration		Approx 300 x 65 x 200 mm														
External Dimension (WxHxD) (Excluding protruding parts)		Approx 11 13/16" x 2 9/16" x 7 7/8"														

Input Format		Balanced and Unbalanced					Balanced and Unbalanced			
Input Coupling		Balanced DC, Balanced AC, Unbalanced DC					DC			
Input Impedance		1 M ohm					1 M ohm			
Input Range (over-range to +/-127%)		+/- 0.01/0.0316/0.1/0.316/1/3.16/10/50 V					DC mode : +/- 1/2/5/10 V, ST mode : 500/1000/2000/5000/10000/20000/50000/100000 microST, Precision (range value) +/-1% or less			
Absolute Max. Input Voltage		+/- 100 V					+/- 25V			
Anti aliasing filter		Joint use of both a digital filter(*) and an analog filter(2nd Order Butterworth)					Joint use of both a digital filter(*) and an analog filter(2nd Order Butterworth)			
LPF		---					10, 30, 100, 300, 1k, 3k, 10k, 30kHz, Pass-48dB OCT Butterworth filter (Switched Capacitor Filter = SCF) for 8 channels independent. At LPF to Pass Joint use of both a digital filter(*) and an analog filter (2nd Order Butterworth)			
Frequency Bandwidths		DC to the sampling frequency (listed above)/2.4					DC Coupling : DC to the sampling frequency (listed above)/2.4, AC Coupling : 1Hz to the sampling frequency (listed above)/2.4, +/-0.5 dB			
Num. of Quantizing Bits		16bits/24bits					16bits/24bits			
Conversion Method		128 times over sampling delta sigma method : however 64 times over sampling at 40kHz					128 times over sampling delta sigma method : however 64 times over sampling at 40kHz			
Linearity		+/-0.1 % or less					+/-0.1 % or less			
Distortion Factor		+/-0.1 % or less					+/-0.1 % or less			
Range Accuracy		+/-0.1 % or less					+/-0.1 % or less			
Signal to Noise ratio (16bits/24bits) (25 deg C)		+/-0.1 % or less					+/-0.1 % or less			
Crosstalk		+/-0.1 % or less					+/-0.1 % or less			
Inter-channel phase difference		1 deg or less (At 20 kHz or less), 3 deg or less (At 400 kHz or less)					1 deg or less (At 20 kHz or less), 3 deg or less (At 400 kHz or less)			
TEDS sensor		Possible (V 0.9)					---			
Input Connector Type		BNC					Lemo 7-pin, 10e (ECG0 Type)			
Output Format		Unbalanced					Unbalanced			
Output Coupling		DC					DC			
Output Impedance		75 ohm					75 ohm			
Output Range		+/-1 to 5 V, 0.1 V Step					+/-1 to 5 V, 0.1 V Step			
Smoothing Filter		Combination of Analog filter + Digital filter					Combination of Analog filter + Digital filter			
Frequency Bandwidths		DC to the sampling frequency (listed above)/2.4 +/-0.5dB					DC to the sampling frequency (listed above)/2.4 +/-0.5dB			
Num. of Quantizing Bits		16 / 24 Bits					16 / 24 Bits			
D/A Conversion Method		128 times over sampling delta sigma method : however 64 times over sampling at 40kHz					128 times over sampling delta sigma method : however 64 times over sampling at 40kHz			
Linearity		+/-0.1 % or less					+/-0.1 % or less			
Distortion Factor		+/-0.2 % or less					+/-0.2 % or less			
Range Accuracy		+/-0.1 % or less					+/-0.1 % or less			
Signal to Noise ratio (16bits/24bits)/25 deg C		87 / 93 dB (in band) (1V input)					87 / 93 dB (in band) (1V input)			
Crosstalk		-78 dB (At 20 kHz or less) -75 dB (At 40 kHz or less)					-78 dB (At 20 kHz or less) -75 dB (At 40 kHz or less)			
Inter-channel phase difference		1 deg or less (At 20 kHz or less), 3 deg or less (At 40 kHz or less)					1 deg or less (At 20 kHz or less), 3 deg or less (At 40 kHz or less)			
Output Connector Type		BNC					BNC			
Weighting		FLAT/AIC					Gauge Factor 2.0			
HPF		OFF/10/20 Hz					Applicable Gauge Resistance 120 to 2000 ohm			
Supply voltage for a sensor		28V DC/4mA					Bridge Connection Full Bridge			
							Bridge Method DC			
							Remote Sensing Possible			
							Balance Range +/- 10000 microST			
							Balance Method By electronic auto balance			
							Bridge Voltage 2V (H+I)			
							10V(H+S)			

- * Specify one when you order
- Main Body * LX-110 / LX-120
- Number of Channels * 8 / 16 / 32
- Amplifier * DC / PA / Strain / Output
- Recording Devices * Internal Memory / PC card
- Interface * Ethernet / Firewire(IEEE1394)
- Remote Control Unit / PC
- Accessories
 - DC Cable
 - AC Adapter
 - LX Navi software

TEAC

Data Recording and Acquisition Unit
LX-100 Series
 LX-110 / LX-120

http://www.teac.co.jp



Pursuit of "Usability" and "Speed".
 Endless evolution of data recording

LX-100 Series data acquisition and recording system pursues the usability and reliability in the field.
 LX-100 Series supports FAT32, 24bits AD conversion and RoHS (Restriction of Hazardous Substances).

- FAT32 file system for large capacity card
 - 100dB dynamic range by 24 bits AD
 - Supports voltage, sound, vibration and strain from DC to 40kHz
 - Records in TAFFmat data format.



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LX-100 series accepts the needs of customers.

LX-100 Series data acquisition and recording system was designed for reliable use in the lab and the field, and quick data processing. Following the convenience of TEAC DAT technology, the LX-100 Series enables a wider recording bandwidth. The connectivity to a transducer and PC are enhanced to meet the customer needs and offer cost-efficient data acquisition.

- Select 1** Choice of Main Body
LX-110 / LX-120
- Select 2** Choice of Number of Channels *
8 / 16 / 32
- Select 3** Choice of Amplifier *
DC / PA / Strain / Output
- Select 4** Choice of Recording Devices *
Internal Memory / PC card
- Select 5** Choice of Interface *
Ethernet / Firewire(IEEE1394)
- Select 6** Choice of Control Unit
Remote Control Unit / PC

*Specify number of channels when you order

Records voltage, sound, vibration and strain from DC to 40kHz bandwidth

It achieves 100dB dynamic range by 24 bits AD
*PA amp 3.16V range.

Up to 128 channels of synchronous recording
Up to 32 data channels can be recorded using an expansion unit.
Up to four LX-100 units can be synchronized to achieve as much as 128 recording channels.
(Recording synchronization is an optional function)

The wideband multi channel recording 20kHz x 8channels. It's twice the bandwidth as a DAT recorder provides.
* 16 bits AD mode

Up to 8GB recording
FAT32 file system for large capacity card
Up to 8GB card can be used at the moment.

The analog monitor output is available during recording. Time base conversion is possible in playback.

Recording format is TAFFmat, which is supported by many popular analysis software applications.

Through a remote control unit (stand-alone) or PC (LX Navi software), the LX-100 Series can be fully controlled

Full color remote control unit ER-LXRC100

Recording Devices
Choice of Memory and Memory + PC card drive

Trigger recording
Voice Memo recording
A voice memo can be recorded, which simplifies the future data searches. Trigger recording offers the pre-trigger, level-trigger, the repeat and interval recording.

DC power supply and AC adapter
OPTION : Battery Unit

OPTION :
Wave data display software LX View (PL-S1001)

PC card slot

CF card & Adapter

LX-110 *Standard Model*

The LX-110 provides superior recording and playback performance with selectable recording media and input/output configurations.

LX-120 *High Specification Model*

In addition to all recording and playback features of the LX-110, LX-120 provides the selection of additional sampling rate and Tachometer pulse inputs.

Various sampling frequencies from high speed to low speed for extended time recording are available as selection.

96kHz, 102.4kHz, 65.536kHz, 100kHz and lower sampling are (from 1kHz to 1/60Hz).

- LX-110** 96kHz, lower sampling
- LX-120** 96, 102.4, 65.536, 100kHz, lower sampling

LX-100 Series Choice of Recording Devices

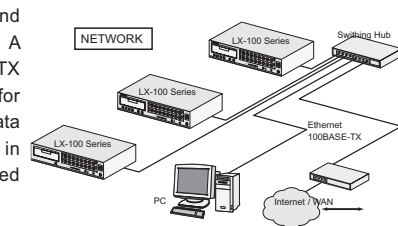
Internal Memory & PC card

Memory - From standard 64MB to 576MB of internal memory achieving the maximum recording rate.
PC card - Supports up to 8GB PCMCIA Type II or Compact Flash enabling the recording in harsh environments.

LX-100 Series Choice of Interface

Ethernet / Firewire(IEEE1394)

Simultaneous recording to media and PC with a selection of interfaces. A Firewire(IEEE1394) or 100BASE-TX Ethernet interface are available for the connection to the PC. The data can be transferred to a PC in real-time and displayed, processed and stored in the PC HDD.



LX-100 Series Choice of Number of Channels

Up to 32 channels

8 or 16 recording channels with a main unit or 32 channels using an expansion unit.



LX-100 Series Choice of Amplifier

Expandable amplifier with 8 channels per unit.

Various sensor amplifiers are available.

Three types of input amplifier cards are available :
A DC input amp card with lower sampling (from 1kHz to 1/60Hz), a selectable DC/IEPE(*) accelerometer input amp card, and a selectable DC/IEPE(*) accelerometer input amp card. The output amplifier card outputs the analog voltage during recording and plays-back the analog voltage.

* IEPE : Integrated Electronics Piezoelectric.

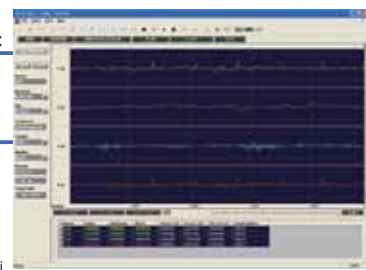
DC	DC input amplifier	[AR-LXDC100]
PA	PA input amplifier	[AR-LXPA100] With TEDS
Strain	Strain amplifier	[AR-LXST100] Common use DC input
Output	Output amplifier	[AR-LXAO100] lower sampling will be available in the near future.

LX-100 Series Choice of Control Unit

Remote Control Unit or PC

Through a remote control unit (stand-alone) or PC (LX Navi software), the LX-100 Series can be fully controlled.

LX Navi



An example Amplifier board & number of channels

DC Input Type	PA Input Type	Strain Input Type
8ch Input/Output	8ch Input/Output	8ch Input/Output
DC Output	PA Output	Strain Output
16ch Input	16ch Input	16ch Input
DC DC	PA PA	Strain Strain
16ch Input/Output	16ch Input/Output	16ch Input/Output
DC DC Output Output	PA PA Output Output	Strain Strain Output Output
32ch Input	32ch Input	32ch Input
DC DC DC DC	PA PA PA PA	Strain Strain Strain Strain

Frequency Bandwidth vs. Recording Time

Internal memory recording An example) Nom. of 8 Channels , 576MB Memory

Frequency Bandwidth (Sampling Frequencies)	Recording Time	
	16bit	24bit
DC to 40 kHz (96 kHz)	Approx 6 minute	-
DC to 20 kHz (48 kHz)	Approx 12 minute	Approx 6 minute
DC to 10 kHz (24 kHz)	Approx 24 minute	Approx 12 minute
DC to 5 kHz (12 kHz)	Approx 48 minute	Approx 24 minute
DC to 2.5 kHz (6 kHz)	Approx 1 h 36 min	Approx 48 minute
DC to 1.25 kHz (3 kHz)	Approx 3 h 12 min	Approx 1 h 36 min
DC to 675 Hz (1.5 kHz)	Approx 6 h 24 min	Approx 3 h 12 min
DC to 400 Hz (1 kHz)	Approx 9 h 36 min	Approx 4 h 48 min
DC to 80 Hz (200 Hz)	Approx 48 hour	Approx 24 hour

Note : Recording rate is approx 1.6MB/sec (DC to 40 kHz bandwidth x 8ch)

PC card recording An example) Nom. of 8 Channels , 4GB PC card

Frequency Bandwidth (Sampling Frequencies)	Recording Time	
	16bit	24bit
DC to 20 kHz (48 kHz)	Approx 1 h 20 min	-
DC to 10 kHz (24 kHz)	Approx 2 h 40 min	Approx 1 h 20 min
DC to 5 kHz (12 kHz)	Approx 5 h 20 min	Approx 2 h 40 min
DC to 2.5 kHz (6 kHz)	Approx 10 h 40 min	Approx 5 h 20 min
DC to 1.25 kHz (3 kHz)	Approx 21 h 20 min	Approx 10 h 40 min
DC to 675 Hz (1.5 kHz)	Approx 42 h 40 min	Approx 21 h 20 min
DC to 400 Hz (1 kHz)	Approx 84 h 40 min	Approx 42 h 40 min
DC to 80 Hz (200 Hz)	Approx 320 hour	Approx 160 hour

Note : Recording rate is approx 0.8MB/sec (DC to 20 kHz bandwidth x 8ch)

Synchronous video and data recording

AQ-VU is a visual data recorder with which 4-channels of video and analog signals can be synchronously recorded and played back. By synchronizing LX-100 series data recorder with AQ-VU, a variety of data measurements are possible.



Visual data recorder AQ-VU

Connecting to Data Analysis Software

The recording format is TAFFmat which is compatible with Windows file system and it is commonly used by TEAC Digital Data Recorders. The TAFFmat data file can be read by LX View software and by many other popular analytical software applications.

A real-time front-end software (Windows DLL) is also available for a system integrator for direct control of LX Series recorders. Contact TEAC for detail.

General analysis software

FlexPro7 Win Professional

DADISP/2002

ME'scope Visual Engineering Series
Used only in 16 bits mode

Options

Remote Control Unit (ER-LXRC100)
Display : Color LCD 320x240 pixels
Functions :
Bar meter display
Main-unit control (setting recording reproducing)
Microphone input
External Dimension (W x H x D) :
Approx 170 x 30 x 100 mm (excluding protruding Parts)
Weight :
Approx 0.65 kg (excluding cables)

Battery Unit (BU-81)
Internal Battery Pack : HP-30L from Paco Electronics Industry Inc.
Num. of Internal Battery Packs : 3 (battery packs described below)
External Dimension (W x H x D) :
Approx 300 x 27.5 x 200 mm 11 13/16" x 1 1/16" x 7 7/8" (excluding protruding Parts)
Weight :
Approx 1.5 kg/3 lb (excluding the battery pack and mounting brackets)

Battery Pack (HP-30L)
(Paco Electronics Industry Inc.)
Supply voltage :13.2V
Capacity : 3.3 Ah
Weight : Approx 700 g /1.5lb
Size : NP1type
Battery charger for Battery Pack
(KH-2S from Paco Electronics Industry Inc.)
Power Supply : 100V AC (200V AC Automatic reshuffling)
Slot for Battery Pack : 4

Battery Unit (BU-81)

Battery Pack (HP-30L)

Vehicle Mount Adapter