

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	32ch	8ch	16ch	8ch	16ch	32ch	8ch	16ch
Weight	LX-110	3.6/7.9	3.9/8.6	6.1/13.4	3.9/8.6	6.1/13.4	3.9/8.6	6.1/13.4	3.9/8.6	6.1/13.4	3.9/7.9	6.1/13.4	3.9/8.6	6.1/13.4
Approx (kg/lb)	LX-120	3.7/8.1	4/8.8	6.2/13.6	4/8.8	6.2/13.6	3.7/8.1	4/8.8	6.2/13.6	3.7/8.1	4/8.8	6.2/13.6	4/8.8	6.2/13.6
Power	LX-110	30	36	48	36	48	35	46	66	46	66	66	56	86
Consumption(W)	LX-120	36	42	56	42	56	41	52	76	52	76	46	62	92
Sampling Frequencies	LX-110	96 / 48 / 24 / 12 / 6 / 3 / 1.5 kHz (Common to each Channel)												
	LX-120	102.4 / 51.2 / 25.6 / 12.8 / 6.4 / 3.2 kHz												
		Low speed sampling				Cutoff Frequency				Attenuation				
		1kHz				400Hz				-80dB (at 500Hz)				
		500Hz				200Hz				-80dB (at 250Hz)				
		200Hz				80Hz				-80dB (at 100Hz)				
		100Hz				40Hz				-80dB (at 50Hz)				
		50Hz				20Hz				-80dB (at 25Hz)				
		20Hz				8Hz				-80dB (at 10Hz)				
		10/5/2/1Hz				4Hz				-80dB (at 5Hz)				
		2/5/10/30/60s (cycle)				4Hz				-80dB (at 5Hz)				
		(Aliasing may occur at and under 5Hz sampling)												
Sampling Frequencies	LX-120 only	102.4 / 51.2 / 25.6 / 12.8 / 6.4 / 3.2 kHz												
		65.536 / 32.768 / 16.384 / 8.192 / 4.096 / 2.048 / 1.024 kHz												
		100 / 50 / 20 / 10 / 5 / 2 / 1 kHz (Common to each Channel)												
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 : (Cannot be used simultaneously with tachometer pulse input) Num. of Output Channels : 1 Output signal : Sine wave, Sweep Sine wave, Pulse, Pink noise, White noise												
Input Format		Unbalanced				Balanced and Unbalanced				Balanced and Unbalanced				
Input Coupling		DC				Balanced DC, Balanced AC, Unbalanced DC				DC				
Input Impedance		1 M ohm				1 M ohm				1 M ohm				
Input Range (over-range to +/-127%)		+/- 0.5/1/2/5/10/20/50 V				+/- 0.01/0.03/0.1/0.3/1/3/10/30/50 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				+/- 50 V, but +/-100 V in the +/-50V range				+/- 25V				
		Weighting				HPF				Supply voltage for a sensor				
		FLAT/A/C				OFF/10/20 Hz				28V DC/4mA				
		Gauge Factor				Applicable Gauge Resistance				Bridge Connection				
		2.0				120 to 2000 ohm				Full Bridge				
		Balance Range				Balance Method				Bridge Voltage				
		+/- 10000 microST				By electronic auto balance				2V (+/-1V)				
		10V(+/-5V)												
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)				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. All 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				DC Method : DC to the sampling frequency (listed above) / 2.4, +/-0.5 dB ST Method : DC to 30 kHz, +/-0.5 dB				
Num. of Quantizing Bits		16bits / 24bits				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				128 times over sampling delta sigma method : however 64 times over sampling at 40kHz				
Linearity		+/-0.1 % or less				+/-0.1 % or less				+/-0.1 % or less				
Distortion Factor		Sampling Frequencies				Input Range				Distortion factor				
		96kHz				20kHz				+/-0.1% or less				
		48kHz				10kHz				+/-0.07% or less				
		24kHz or less				fs / 4.8				+/-0.4% or less				
		+/-0.1 % or less				+/-0.1 % or less				+/-0.1 % or less				
Range Accuracy		+/-0.1 % or less				+/-0.1 % or less				+/-0.1 % or less				
Signal to Noise ratio (16bits/24bits) (25 deg C) (in band)		Input Range				band (dB)				20kHz				
		0.01V				64 / 67				60 / 63				
		0.0316V				74 / 77				69 / 72				
		0.1V				83 / 86				77 / 80				
		0.316 / 1 V				87 / 93				77 / 80				
		3.16V				87 / 96				77 / 80				
		10 / 50 V				87 / 98				77 / 80				
		+/-0.1 % or less				+/-0.1 % or less				+/-0.1 % or less				
Crosstalk (in band)		Input Range				band (dB)				1kHz				
		0.01V				-64				-60				
		0.0316V				-73				-69				
		0.1V				-78				-74				
		0.316 / 1 / 3.16 / 10 / 50 V				-78				-74				
		-82 / -88				-80 / -86				-87 / -83				
		-80 / -86				-87 / -83				-77 / 83				
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)				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				BNC				Lemo 7-pin, 10e (ECG0 Type)				
Output Format		Unbalanced				Unbalanced				Unbalanced				
Output Coupling		DC				DC				DC				
Output Impedance		75 ohm				75 ohm				75 ohm				
Output Range		+/-1 to 5 V, 0.1 V Step				+/-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				Combination of Analog filter + Digital filter				
Frequency Bandwidths		DC to fs / 2.4 +/- 0.5 dB (< fs 48 kHz)				DC to fs / 2.4 +/- 0.5 dB (< fs 48 kHz)				DC to fs / 2.4 +/- 0.5 dB, -3 dB				
Num. of Quantizing Bits		16 / 24 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				128 times over sampling delta sigma method : however 64 times over sampling at 40kHz				
Linearity		+/-0.1 % or less				+/-0.1 % or less				+/-0.1 % or less				
Distortion Factor		+/-0.2 % or less				+/-0.2 % or less				+/-0.2 % or less				
Range Accuracy		+/-0.1 % or less				+/-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)				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)				-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)				1 deg or less (At 20 kHz or less), 3 deg or less (At 40 kHz or less)				
Output Connector Type		BNC				BNC				BNC				

* 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

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TEAC CORPORATION Information Products Division

1-47 Ochiai, Tama-shi, Tokyo 206-8530, Japan
 Phone : +81-42-356-9161
 FAX : +81-42-356-9185
 URL : http://www.teac.co.jp/

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
 - Records voltage, sound, vibration and strain from DC to 40kHz
 - Supports various popular analysis software formats
 - Records in TAFFmat data format.



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 10V 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

Possible to record longer using high capacity CF card
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

CF card & Adapter

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)

Select 1 Choice of Main Body

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

Select 4 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.
* : As of March, 2008.

Select 5 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.

Select 2 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.

Select 3 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.

Select 6 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.

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
16ch Input	16ch Input	16ch Input
16ch Input/Output	16ch Input/Output	16ch Input/Output
32ch Input	32ch Input	32ch Input

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 (Commercial product)

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.
Please contact each distributor in your country

General analysis software (Commercial product)

FlexPro7 Professional Developed by Weisang GmbH

DADISP/2002 Developed by DSP Development Corporation

ME'scope Visual Engineering Series Used only in 16 bits mode. Developed by Vibrant Technology, Inc.

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

Vehicle Mount Adapter TZ-LXVM Series