LINEEYE®

LE-270GR
LE-270AR
LE-270A

CAN / LIN
Communication Data Logger

A communication data logger that supports SD cards, which is capable of real time communication analysis when PC-connected

It powerfully supports the development of in-vehicle equipment.

NEW

LE-270GR >>> CAN/LIN Analog GPS Accelerometer Wi-Fi Simulation

LE-270AR >>> CAN/LIN Analog Wi-Fi Simulation

LE-270A >>> CAN/LIN Analog

CAN/LIN Communication Data Logger LE-270GR / LE-270AR / LE-270A

Compact size, and high reliability to withstand onboard testing

Communication Data Logger saves CAN/LIN data in the SD card for long hours.
It is useful for testing in-vehicle equipment.

*1: For attaching the optional DIN rail plate. Pitch: 70mm. Depth: 3.5mm (max).

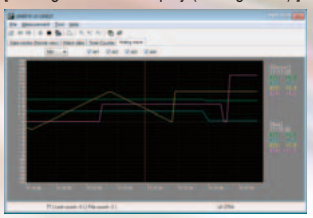
Pin Assignment of Measurement Connector

Pin	Signal
1	BATTERY
4	GND
7	GND
9	External Signal Input 1
10	External Signal Input 2
11	External Signal Input 3
12	External Signal Input 4
14	TRGIN
15	CAN1 High
16	CAN1 Low
17	TRGOT2
18	TRGOT1
19	CAN2 High
21	CAN2 Low
22	GND
23	LIN1
24	LIN2

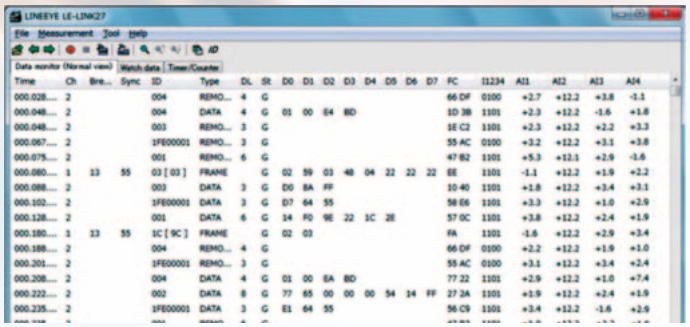
Measure CAN/LIN/Analog Signals at the Same Time

It can measure 2 channels of CAN/LIN communication lines and can simultaneously register voltage data of 4 external signals (logic and voltage). It can register the status of external signals when receiving data and also has the mode to register the signals by specified period.

[Analog Waveform Display (Analog Mode)]



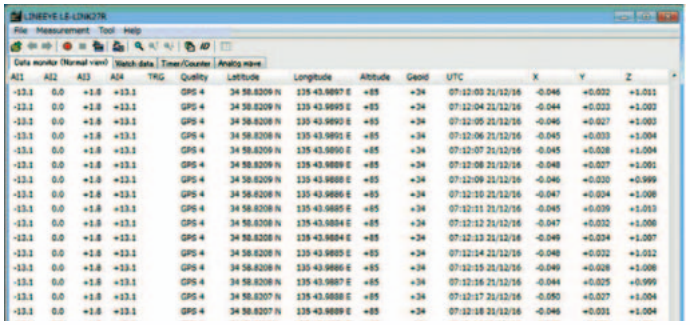
[Simultaneous recording of communication data and 4 analog signals value]



GPS positioning data and acceleration data can be recorded at the same time (LE-270GR)

LE-270GR can measure GPS positioning data and acceleration data in addition to the simultaneous recording of CAN/LIN communication and 4 external signal statuses. It has 3-axis accelerometer and helps you the testing of vehicle development.

[GPS positioning data and acceleration data display]

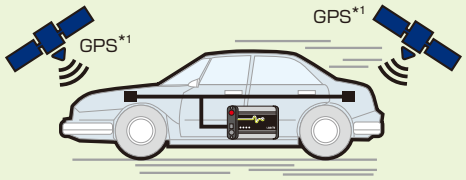


Easy-to-Operate Data Logger Mode

Simply press a switch on the panel to start logging the measurement data into an SD card. No complicated configuration operation is required in the field, since the measurement conditions can be stored in advance in a configuration file in the SD card. The measured log file can be transferred from the SD card to a PC for analysis.

[The compact body is suitable for vehicle testing]

Logger Mode (PC less)



Automatic measurement into a SD card and checking log data via Wi-Fi*2 are available.

It is useful in the situations of:

*PC usage is not allowed. *There are space limitations.
*Dusty places (PC cannot be used).
*Need to record data for more than one month.
*Cannot operate the analyzer well.

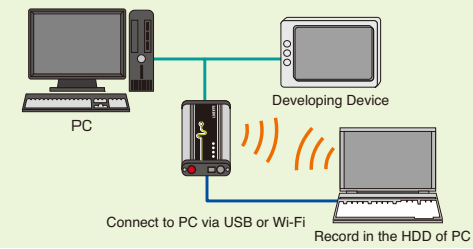
*1: GPS function is supported only by LE-270GR.
*2: Wi-Fi function is available only in Japan, USA, Canada, and EU. LE-270A doesn't support Wi-Fi function.

Remote mode capable of real-time monitor display

When PC-connected via USB or Wi-Fi, it operates as a PC-connectable analyzer that is capable of changing the settings of measurement conditions, displaying measurement data in real time and recording continuously to a HDD from a PC. It can also display a communication log file acquired in the logger mode and create a measurement configuration file for logger mode.

[Remote Log Setting]

Remote mode (PC connected)



Long Hour Recording

Log files are saved at the specified file size and number of files, continuously as a ring buffer. Also, measurement can stop when the specified number of files has been made. It is useful for detecting any hindrance in the line.

[Setting items]

Save mode･･･Restart, Max-stop, Append
Max files･･･1 - 1024
File size･･･128K /1M /2M /4M /8M /16M*1 /32M*1

[Record Control Setting]*2

Baud Rate	8G byte SDHC card
125Kbps	Approx. 60 Hours
1Mbps	Approx. 13 Hours

*1: LE-270A does not support 16M/32M.
*2: In the case of 12 byte/ frame data with 0.1ms interval monitered by LE-270A.

Acquire log file while logging (LE-270GR/AR)

You can check the log file in the SD card while logging by accessing the analzer via Wi-Fi. By this function, you can check the log data without stopping measurement.

Perform analysis at any communication rate

General communication rates via CAN and LIN have been preset. However, it can be configured to any communication rate. For CAN, it is capable of fine-adjusting the bit sampling timing.

It can transmits the pre-registered data (LE-270GR/AR)

By the simulation function, the analyzer turns to be a CAN/LIN node and can transmit the pre-registered data frame or remote frame. It can transmit the data set on the simulation data table while measurement. It will help your development testing.

Communication errors can be detected with high reliability.

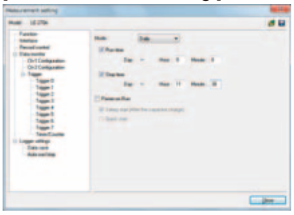
It can judge and record various errors in CAN and LIN, and display them with error marks.

ST	Meaning
G	Normal Frame
B	Synch Break error of LIN
S	Synch Field error of LIN
P	Parity error of LIN
L	Data length error of LIN
R	When the data of the Response of LIN is less than 1byte
C	CRC error of CAN / Checksum error of LIN
A	ACK error of CAN
E	Error frame of CAN
F	Form Error of CAN

Schedule Measurement. Low Power Consumption

Real Time Clock (RTC) backed up by the battery of the analyzer makes it possible to specify the starting and ending times of the measurement. After the measurement, it turns off the power automatically and saves on power consumption. Power-On-Run function starts measurement when the power is supplied from the test devices, and Auto-Power-Off function ends measurement when there is no power supplied from the test devices. This minimizes battery usage of in-vehicle equipment.

[Auto RUN/STOP setting]



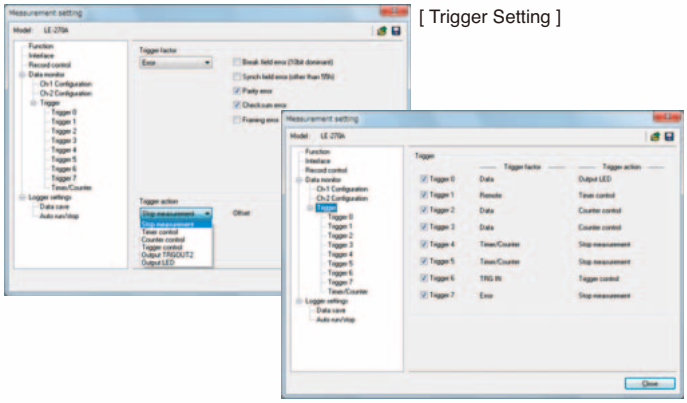
Protects the SD cards from corruption due to any sudden power failure

A newly developed instant power failure prevention circuit protects important communication log files stored in the SD cards, by protecting the SD cards from being corrupted if power fails while recording data to the SD card. It can be used safely in any on-board test where power supply is likely to be unstable.

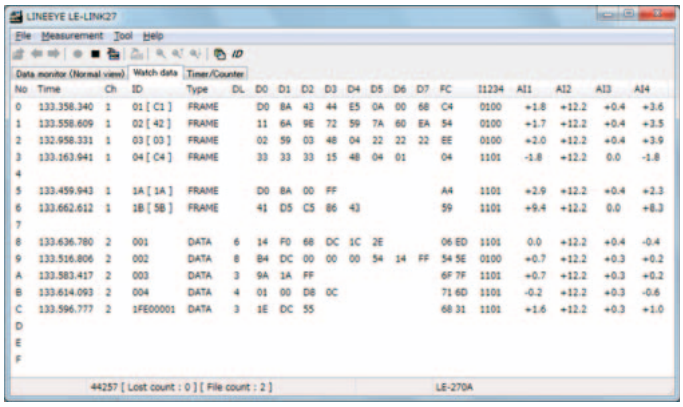
Efficient analysis using the filtering and triggering functions

The device is equipped with the ID filtering function and a powerful triggering function. It is capable of effectively measuring only the communication between the IDs of interest, automatically stopping measurement in the event of any error or when specific data is received, and notifying any error with an external trigger signal output and/or alert with an LED light-up.

[Trigger Setting]



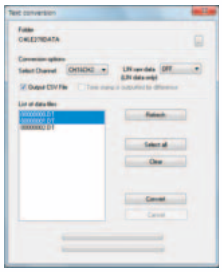
[Watch Data Display (Display specified data of each ID)]



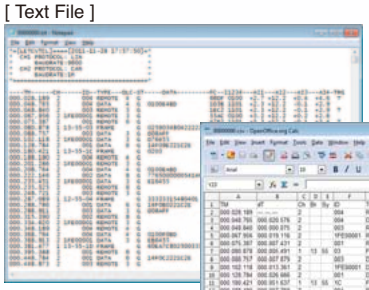
Mass data is analyzed efficiently.

The device has a search function that can search not only communication data but also according to the trigger agreement or time stamp. One or more communication log files can be converted collectively into text or CSV format so that communication data can be used effectively in a word processor and/or spreadsheet software.

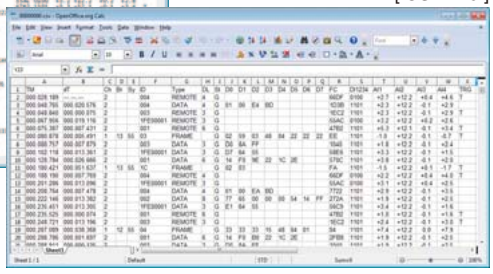
[Text Conversion Setting]



[Text File]



[CSV File]



Small and robust housing suitable for severe on-board testing

The palm-sized robust unit can be used between –20 to +60˚C. It can be installed even within a limited vehicle test space. The consumption current is as low as 100mA* at DC12V input. With the dust-proof cover closed, and the DC cable and optional water-proof DSUB cable connected, it can be used in places where it may be exposed to dust and drip.

[Onto 35mm DIN Rail]

[Dust-proof Covers]

* For LE-270A

Specifications

Model		LE-270GR	LE-270AR	LE-270A
Interface		CAN: Comfort to ISO11898, TJA1050 LIN: Comfort to ISO9141, TJA1021		CAN: Comfort to ISO11898T, JA1050 Comfort to ISO11519-2, TJA1054 LIN: Comfort to ISO9141, TJA1020
Connector		DSUB 25 pin male connector #4-40UNC		
Number of Channels		2 channels of CAN or LIN, or 1 CAN and 1 LIN		
Protocol		CAN, Device Net, LIN (Rev1.1, 1.2, 1.3, 2.0, 2.1)		
Baud Rate		CAN:125kbps - 1Mbps LIN:400bps - 26Kbps (arbitrary)		CAN:20kbps - 1Mbps LIN:400bps - 26Kbps (arbitrary)
CAN Monitor		Standard/ Expansion format. Support bit timing settings.		
LIN Monitor		Frame breaking is possible according to the data length of each ID or specified idle time.		
Error Check		Break:(LIN), Sync:(LIN), Parity:(LIN), Checksum:(CAN/LIN), Framing:(LIN)		
Memory		PC: Max 32G byte on the HDD, PC-less: Capacity of the SD card (Specify the file size as 128K/ 1M/ 2M/ 4M/ 8M/ 16M/ 32M byte)		PC: Max 8G byte on the HDD, PC-less: Capacity of the SD card (Specify the file size as 128K /1M / 2M/ 4M / 8M byte)
Recording Type		Ring Buffer (continuous) mode, Fixed Buffer (full stop) mode		
Mode	Action Mode	Remote mode (with PC); Data Logger mode (PC-less)		
	Measurement/Test Mode	Online mode, Analog mode, MANUAL transmission mode		Online mode, Analog mode
Measurement start/stop		Control from PC, Start/Stop switch, Auto-Power run, Specify date and time.		
Time Stamp		"Hr:Min:Sec", "Min:Sec:x1ms", 9 digits: "100µs", "10µs", "1µs" (selectable)*1		
Filter		Record specific frames using Bit-mask ID, Bus ID and Cut ID.		
Display on PC		Real-time display, Watch data display(display specified data of each ID), Analog Wareform		
Trigger	Condition	Data string up to 8 characters, specified remote frame (CAN), frame error (LIN), timer and counter, logic status of external signal, external trigger input.		
	Action	Stop measurement (offset can be set), validates/invalidates trigger condition, control timer/counter, turn on/off the light of user-defined LED, output external signals, CAN data transmission*2, start/stop data capture		
Retrieval function on PC		Trigger matched data, Error (Break, Sync, Parity, Checksum, Framing), Data: Specified ID (don't care available), Data string (Up to 8 characters; don't care and bit mask available), CAN Remote Data: Specified ID (don't care available), Specified Time stamp, External signal		
External Signal Input		Diginal/Analog 4 channels Recording: At the time of receiving signals, or specified sampling cycle (1ms - 10min, 13steps) Diginal VIH 2V (Min.), VIL 0.5V (Max.) Analog Range: -16V to +16V, Accuracy: ±0.5%FS, A/D conversion: 15Ksps, Resolution: 10bit		
Acceleration data		Registers acceleration data of X/Y/Z axes. 3 axes acceleration sensor (equivalent to KX022-1020-FR) is built-in.	—	
GPS positioning data		Registers and displays latitude, longitude, and above sea level. SMA (female) connector for active GPS antenna is equipped.	—	
Wi-Fi*3		802.11 b/g/n		—
Conversion		Convert data into Text or CSV format and save.		
LED		5 of two-color LED*4 : Power/Error, Test/Record, CH1/CH2, User-defined U1/U2, Wi-Fi connection		
Switch		One: RUN / STOP		
External Trigger Signal		1 Input, 2 Output (equipped in the measurement connector)		
SD/SDHC Card*5		2 – 32G byte	2 – 16G byte	2 – 8G byte
USB2.0 Port		Mini-B connector. High speed supported.		
Power*6		USB bus power, DC-IN, or 1pin BATTERY terminal External DC power (DC9-34V), AC adapter (6A-181WP09, center plus).		USB bus power, DC-IN External DC power (DC9-29V), AC adapter (6A-181WP09, center plus).
Consumption		About 1.7W (When using Wi-Fi: about 2.3W)	About 1.3W (When using Wi-Fi: 1.9W)	About 1.3W
Run time during power failure		0.5 sec		
Ambient Temperature, Humidity		In operation: -20~+60°C In storage: -20~+60°C, 5 – 85%RH (No condensation)		
Standard		CE (class A), EMC (EN 61326-1:2013)		CE (class A), EMC (EN 61326-1:2006)
Dimensions, weight		86(W)×130(D)×30(H) mm, approx. 240g		86(W)×130(D)×30(H) mm, approx. 230g
PC Environment		OS: Windows® 7/8/8.1/10 PC: PC/AT compatible		

*1: Only "Hr:Min:Sec", "Min:Sec:x1ms"is available on Analog mode.
*2: When using in the Manual mode. LE-270A does not support it.
*3: Wi-Fi function is available only in Japan, USA, Canada, and EU nations where the product is needed to be compliant with RE directive (2014/53/EU).
*4: 4 LEDs for LE-270A
*5: Only SD/SDHC card sold by LINEEYE are supported.
*6: AC adapter is sold separately. In the Remote mode (with PC), the analyzer runs by the USB bus power. IIn the Logger mode (PC-less) and Remote mode with Wi-Fi, you need to have the optional AC adapter (6A-181WP09) or use the proper external power.

Standard Set

CAN/LIN Communication Data Logger…1
CAN/LIN DSUB Cable (LE-25M3A-1)…1
Mini USB cable (SI-US218)…1
Power Plug Cable (SIH-2PG)…1
8G Byte SD Card (SD-8GX)…1
PC Software CD…1
Instruction Manual…1
Warranty…1

OPTIONS

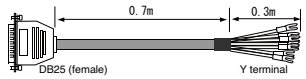
8G byte SD Card **SD-8GX**
16G byte SD Card **SD-16GX**
32G byte SD Card **SD-32GX**
8G byte SD card.*Same as the card packed with LE-270GR/AR/A.

Wide Input AC Adapter
6A-181WP09
Input: AC100~240V, 50/60Hz
Output: DC9V, 2A
Plug: Center+, Outside diameter: 5.5mm, Inside diameter: 2.1mm

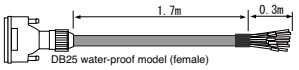
External battery voltage booster

- **LE-BA06**
  Output: DC6V, 700mA
- **LE-BA09**
  Output: DC9V, 470mA
- **LE-BA12**
  Output: DC12V, 350mA
  Plug: Center+, Outside diameter: 5.5mm, Inside diameter: 2.1mm

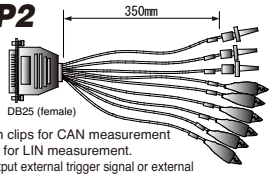
CAN/LIN
DSUB Cable 1m **LE-25M3A-1**
Length: 1m. One side is Y terminal (MS) with mark tags.
* Same as the cable packed with analyzer.



CAN/LIN
Water-proof DSUB Cable **LE-25M3WP-2**
Length: 2m. One side is without terminal with mark tags.
(Custom specification is available for specific length.)
* Connectors or clips necessary for connecting to the object to be measured are to be provided by the user.
* DSUB connectors do not provide drip-proof performance when not connected.
* For LE-270AR,LE-270A

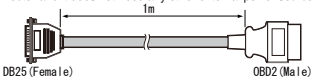


Clip Cable
LE-9LP2

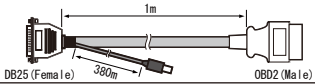


Probe cable with clips for CAN measurement and IC test clips for LIN measurement.
* Cannot input/output external trigger signal or external analog signal.

OBD2-DSUB25 Cable (With power supply line)
OBD2-DB25R2-1
The cable is for LE-270GR/LE-270AR to monitor CAN communication by connected with OBD2 connector. This cable can power the analyzer through OBD2 connector by using 16th pin of the OBD connector and it does not need any other external power source.



OBD2-DSUB25 Cable (With power supply line)
OBD2-DB25C2-1
The cable is for LE-270GR/LE-270AR/LE-270A to monitor CAN communication by connected with OBD2 connector. This cable can power the analyzer through OBD2 connector by using DC plug cable and it does not need any other external power source.



DIN Rail Mounting Plate for LE-series.
LE-DIN13 To mount LE-150PS/LE-200PS/LE-270A on the 35mm DIN rail.

SAFETY WARNING
Read the instruction manual provided with the product before use and use the product as explained in that manual. Using the product in ways not guaranteed in the manual, connecting it to systems outside of the specified ranges and remodeling can all cause trouble and damage. LINEEYE CO., LTD. will assume no responsibility whatsoever for trouble or damage arising because of unauthorized ways of use.

LINEEYE CO., LTD.

■Head Office/Sales Office
Marufuku Bldg, 5F, 39-1 Karahashi Nishihiragaki-cho, Minami-ku, Kyoto, 601-8468
PHONE: 81-75-693-0161 FAX:81-75-693-0163

● URL http://www.lineeye.com
● E-mail : info@lineeye.co.jp

* LINEEYE CO., LTD. is a venture company founded by electronic equipment development members of the former Sekisui Chemical Co., Ltd. with investment from the Sekisui Venture Fund.

L-19101E/LE©

Printed in Japan