

# PHL Videographic Recorder

Record and View Up To 18 Channels of Data with One Powerful Unit

FUJI PHL VIDEOGRAPHIC RECORDER

## Key Features

- Long-term data storage
- Saved data playback
- Math and totalization
- Communications option
- Screen saver
- Compact size
- Portable/desktop option



Portable



Panel Mount

The compact PHL Paperless Recorder displays up to 18 channels of data on a brilliant 5.7" TFT color LCD. A wide variety of display modes allows users to view data as trends (horizontally or vertically), bar graphs, analog meters, digital/numeric output, totalized output, event summaries, and more. Switch between display modes quickly and easily with the 8-key front panel. The adjustable-time screen-saver function extends the life of the display and reduces power consumption.

The PHL comes in a 9 channel or 18 channel model. Users can record up to 12 types of thermocouples, 5 types of RTDs, and DC voltage/current input on one unit. The PHL can literally record years of data with the optional 512MB Compact Flash card, and the standard 16MB card is more than adequate. Free PC support software allows you to configure the recorder from a PC and view historical data stored on the compact flash card. The PHL comes standard with math and totalizing functions.

The Fuji Paperless Recorder includes 16MB of Compact Flash memory, waterproof gasket for the front face, noise filter for the power supply, PC support software, instruction manual, and panel mounting brackets.

## Features

- **Long-term data storage** Up to 1.5 years in Compact Flash
- **Saved data playback** Saved data in Memory card can be easily called out and played back on display
- **Math and totalization** These functions are available as standard
  - **Communications option** RS485, Modbus RTU protocol
  - **Screen saver** When period of non-operation exceeds the setting value of parameter, the recorder turns off the backlight of LCD
  - **PC support software (data viewer/parameter loader)** Supplied on a CD-ROM as a standard accessory
  - **Compact size** 6.3" x 5.7" x 7.4" (160 x 144 x 185mm) (Panel mount). 3 lbs.
  - **9-Point and 18-point recording** 12 types of thermocouples, 5 types of RTDs and voltage/current input are available

- **Wide variety of display modes** Trend recording (horizontal and vertical), bar graph, analog meter, digital display, totalized data, historical trend and event summary

## Specifications

**Mounting method** Panel, flush-mounted (standard); portable (option)

**Material** Molding resin (case, bezel)

**External dimensions and mass**

**(WxHxD)** Panel mount: 6.3" x 5.7" x 7.4" (160 x 144 x 185 mm); approx 3 lbs. (1.5 Kg)

**Power supply voltage** 100 to 240 V AC, 50/60 Hz

**Power consumption** About 42VA (at 200 V AC)

**External terminals** Screw terminals (M3 thread)

## Input

**Number of inputs** 9 or 18 points

**Measuring cycles** 100ms/9, 18 points

**Input signal** Thermocouple: B, R, S, K, E, J, T, N, W, L, U, PN. RTD: Pt100, JPt100, Ni100, Pt50, Cu50. DC voltage: 0 to 50mV, 0 to 500mV, 0 to 5V or 1 to 5V. DC current: connecting optional shunt resistor to input terminal

**Input types** Selected from the key panel. The same type must be set for every 2 channels

**Burn-out function** Equipped for thermocouple and RTD inputs as standard

**Calculation function** Primary delay filter, scaling, calculation of difference between channels, F-value calculation, totalization, and square root extraction

## Math Function

**Formula** Addition, subtraction, multiplication, division, absolute value, X to the power of Y, logarithm, natural logarithm, exponential function, humidity, average value, maximum value, minimum value

**Input signal** DI (DI1 to DI10), totalize (ch1 to ch30), analog input (ch1 to ch30), constant (No.1 to No. 20), communication input (No.1 to No. 12)

## Display

**Display** 5.7" TFT color LCD (320 X 240 dots) with backlight, 14 colors

**Life of backlight** 50,000 hours

**Display contents** Trend display (in vertical and horizontal direction) selected in the refreshment cycles of 1 sec to 12 hours; Scale display/non-display selectable. Bar graph or analog meter display (refresh cycle: 1 second). Digital display (in refreshment cycle of 1 sec). Event summary display (alarm and message summary). Historical trend display (Compact Flash memory data.) Totalized data display. Group setting (4 groups at the maximum)

## Recording Function

**Recording medium** Compact Flash card (Format as FAT16 or FAT, otherwise recorder cannot read and write.)

**Memory capacity** 512MB, max.

**Recording method** Writing starts in fixed cycles by turning ON the REC key on the

front panel. Data is recorded in a new file every time the recording starts

**Data save cycles** Links to refreshment cycle of the trend display

**Data format** ASCII: About 166 bytes per sample (9 channel input). Binary: About 40 bytes per sample (9-channel input)

**Trend data** Average, instantaneous, or min/max values are saved from the data that are sampled in measuring cycles

**Event data** Alarm data and message data are saved

**Totalized data** Stores data totalized during specified period of time

**Storage capacity** About 1.5 years at display refresh cycle of 30 seconds (ASCII). About 6 years (Binary). Based on 9-channel recording with a 256MB compact flash card

**Amount of memory used** The display unit displays how much the memory card has been used via bar graphs. The recording will stop if the amount of recorded data exceeds the capacity

## Alarm Function

**Number of settings** Up to 4 alarms are settable for each channel

**Type of alarm** High/low limits

**Indication** Alarm status is displayed on digital display unit when an alarm occurs. Histories are displayed in the alarm summary

**Output** 9 Points as relay output (option). 18 Points as open-collector transistor output (option)

## Performance

**Indication accuracy**  $\pm(0.15\%+1 \text{ digit})$  of input range for all inputs, except  $\pm(0.3\%+1 \text{ digit})$  for thermocouple B 752 to 1112°F (400 to 600°C), thermocouples R and S 32 to 572°F (0 to 300°C), and thermocouples K, E, J, T, L, and U -328 to -148°F (-200 to -100°C)

**Indication resolution** 0.1°F (0.1°C)

**Reference junction compensation error** 1.0°F ( $\pm 0.5^\circ\text{C}$ ) for K, E, J, T, N, L, U, PN. 2.0°F ( $\pm 1.0^\circ\text{C}$ ) for R, S, B, W

## Ordering Information

Included in standard delivery: 16 megabyte Compact Flash Card, waterproof gasket, CD-ROM, loader cable

**P H L** - **A B B 1 1** - **E 1 C D V**

To create a part number fill in the boxes above with the appropriate number and/or letter from the corresponding list below.

### Box A: Number of Inputs

1 = 9 input points \$ 1695  
2 = 18 input points<sup>1</sup> 2495

### Box B: Mounting Method

1 = Panel mount version N/C  
2 = Portable/desktop version<sup>2</sup> 200

<sup>1</sup> 18 Input points option is not available with Alarm Output/DI Input

<sup>2</sup> Does not have UL, c-UL approval

### Box C: Alarm (Relay) Output/DI Input

0 = Without N/C  
1 = With<sup>1</sup> \$ 295

### Box D: RS485 Communications and Alarm (Open Collector) Output/DI Input

Y = Without N/C  
R = With 550

## Accessories and Spare Parts

SHUNT10	Shunt resistor for DC current input (10 ohms)	\$ 4.25
SHUNT100	Terminating resistor for communication (100 ohms)	4.25
PHZH0801	D-sub type 25-pin connector with male terminal for alarm output (cable not included)	25
CFCR-USB	Compact Flash Card reader (USB connection)	100
CF-512MB	512 megabyte Compact Flash Card	200
CF-256MB	256 megabyte Compact Flash Card	175
CF-128MB	128 megabyte Compact Flash Card	150
CF-64MB	64 megabyte Compact Flash Card	125
CF-32MB	32 megabyte Compact Flash Card	100
RSFC24-W	RS485 to RS232 Converter	135

# PHL Videographic Recorder (continued)

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**Input impedance** 1M ohm approximately for thermocouple and DC voltage  
**Maximum input voltage** ±10 V DC

**Others**

**Clock** With calendar function

**Memory backup** Parameter settings are saved to the internal non-volatile memory. The clock is backed up by a built-in lithium battery. Trend data is backed up to only 400 sample points

**Memory full alarm** When the amount of recorded data exceeds the capacity of memory card, recorder can energize the alarm output

**Low battery alarm** When the battery for backup of clock and SRAM becomes low, recorder can energize the alarm output

**Options**

**Alarm (relay) output/DI input** 10 SPST relay outputs and 5 DI are added. Alarm

output: 120V/3A AC, 30V/3A DC (resistive load). Not available with 18-point input type

**DI input** 5 no-voltage contact input points, recording start/stop, message setting, F-value calculation resetting, totalizing start/stop, totalizing reset or LCD turning-on functions can be performed

**Alarm (open-collector) output/DI** 18 open-collector outputs and 5 DI can be added as an option for 18 channel unit

**Alarm output** Open-collector transistor output for each channel or common channel is possible. DI input: 5 no-voltage contact input points, recording start/stop, message setting, F-value calculation resetting, totalizing start/stop, totalizing reset or LCD turning on functions can be performed

**Communications (RS485, Modbus)**

Baud rate/parity: 9600, 19200bps/none, odd or even. Length/Unit: 500m (total)/32

units max (include master). Recommended Converter: RSFC24-W

**PC Support Software (Standard)**

**Supplied** On CD-ROM

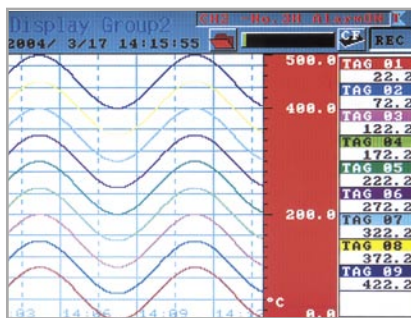
**O/S PC/AT-compatible machine** Windows 98/XP/2000. Operation on PC98-series machines by NEC is not guaranteed.

Operation on self-made or shop-brand PCs is not guaranteed

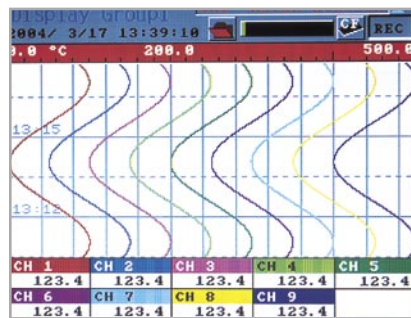
**Required memory capacity** 64MB or more

**Contents** The following types are included as standard: 1) Data viewer software allows you to view the past trend recorded data from the data saved to the Compact Flash on PC. Historical trend and event display functions are provided; 2) Parameter loader software allows you to perform setting/change of various parameters on PC; 3) PC loader communication cable – 3m long

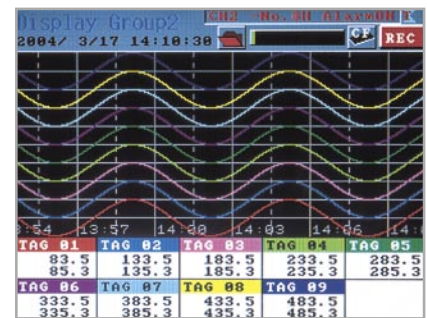
**Trend Recording (Horizontal)**



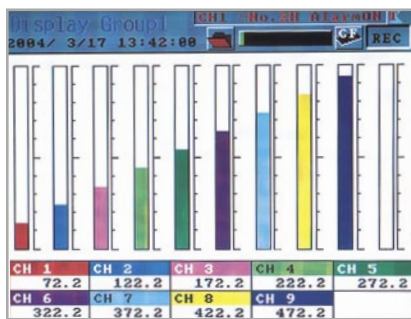
**Trend Recording (Vertical)**



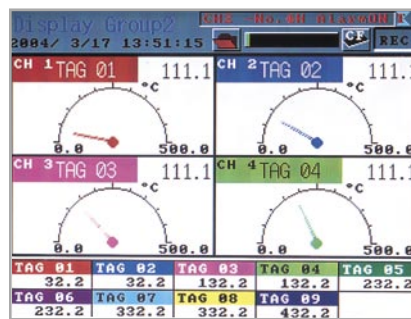
**Historical Trend Display**



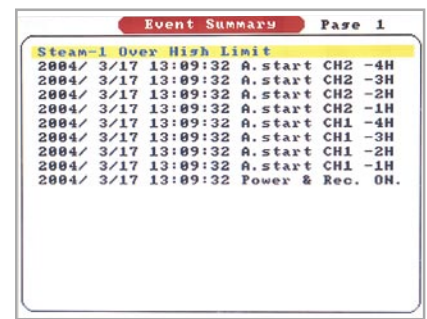
**Bar Graph**



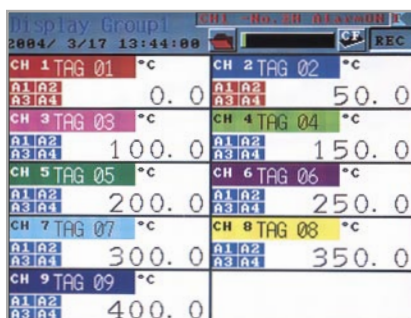
**Analog Meter**



**Event Summary Display**



**Digital Display**



**Totalized Data Display**

