

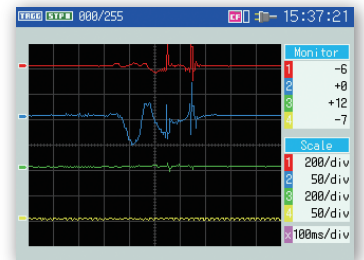
# Handheld Dynamic Strainmeter

# DH-14A

## Mobile measurement of dynamic strain

[M] CH1	ue	[M] CH3	ue
-3		-9	
+1023	-20	+2	-297
[M] CH2	ue	[M] CH4	ue
-17		-9	
+388	-21	+111	-13

Simultaneous sampling of 4 channels



Measuring data indicated by waveform



ECO mode equipped



TEDS compatible



Powered by 4 AA alkaline batteries

# Handheld Dynamic Strainmeter **DH-14A**



DH-14A is a handheld and battery-operated dynamic strainmeter having 4 measurement channels. Dynamic strain is easily measured while monitoring numerical values and waveforms. The DH-14A is well suited not only for measurement in fieldwork or on moving object, but also for checking sensors and input noise as a checker. Using 4 AA alkaline batteries commercially available, the meter allows measurement for 4 consecutive hours (or for 6 hours in power-saving mode (\*)).

\* Depending on conditions such as batteries used and environmental temperature.

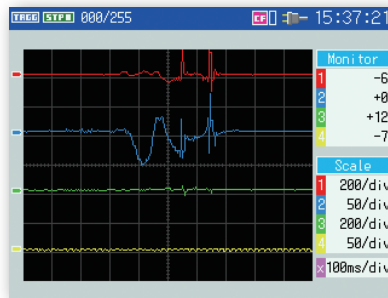
## Display

### [Numeric monitor]



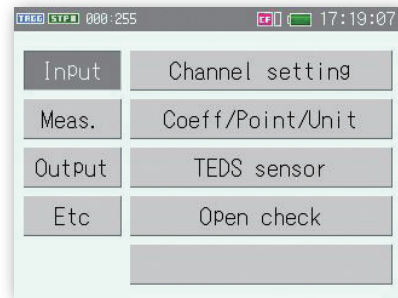
Indicates Monitor value and ± Peak value

### [Wave monitor]



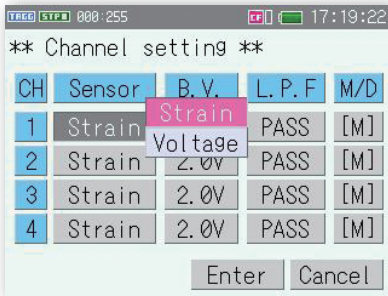
Indicates change of monitor value with time in wave form

### [Menu screen]



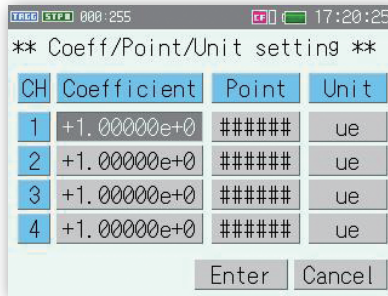
Screen to select menu

### [Channel setting]



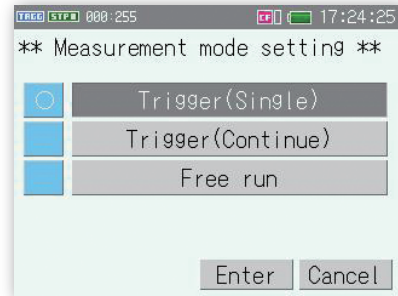
Sensor mode, Bridge voltage, Low pass filter and Measure/Direct are set for each channel

### [Coefficient/Point/Unit setting]



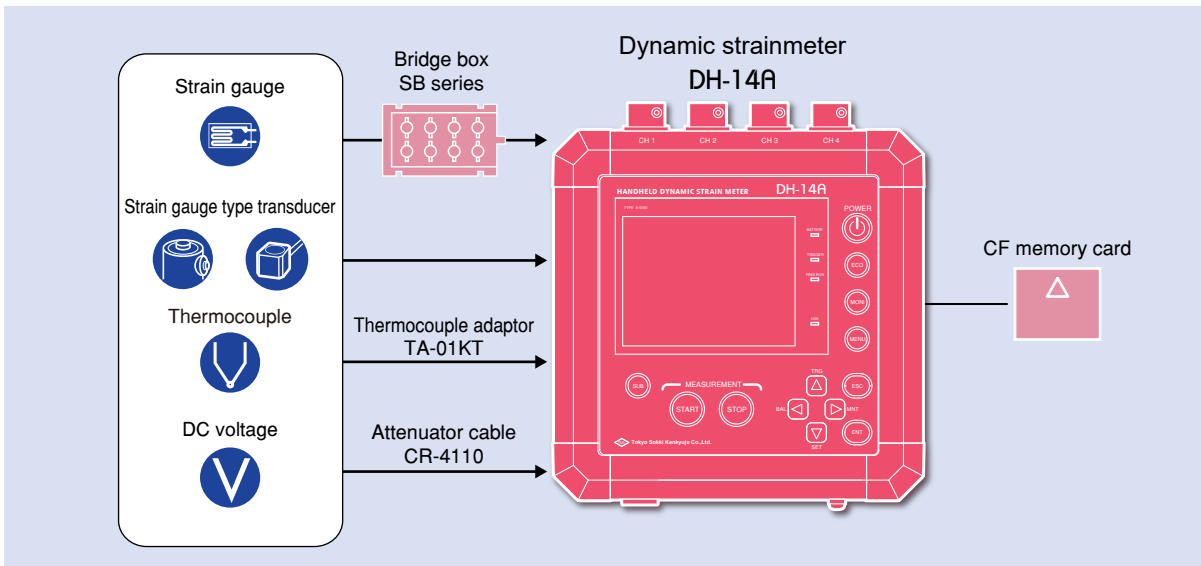
Coefficient, Unit and Decimal point are set

### [Measurement mode setting]



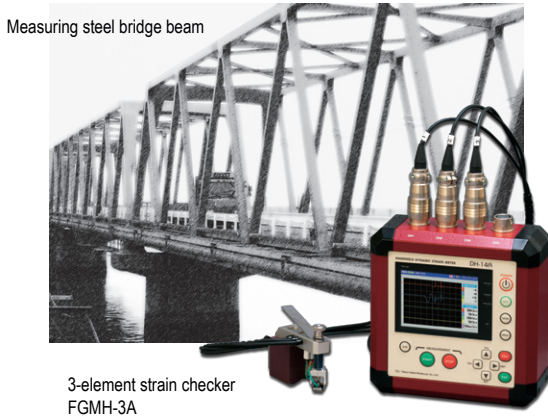
Selects condition to start wave recording

## System configuration



## Application

### Measurement of steel bridge beam using Strain checker FGMH together



Measuring steel bridge beam

3-element strain checker  
FGMH-3A

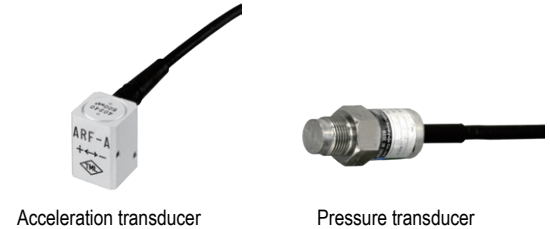
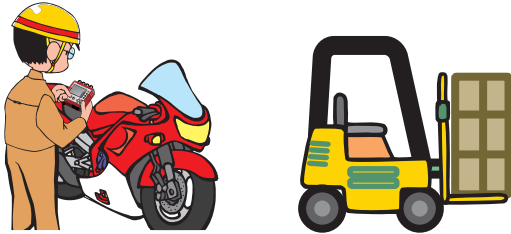
In combined use with the Strain checker FGMH series, the DH-14A can easily measure dynamic strains on steel materials such as bridge beams by changing measurement point one after another.

The Strain checker FGMH series picks up strain using frictional force working on the contact surface of the strain gauge by pressing the strain gauge against the structure with magnetic force.

### Dynamic strain measurement for various purposes Operation check of transducers

Applicable to measurement of oil pressure, vibration, load, etc. on moving object.

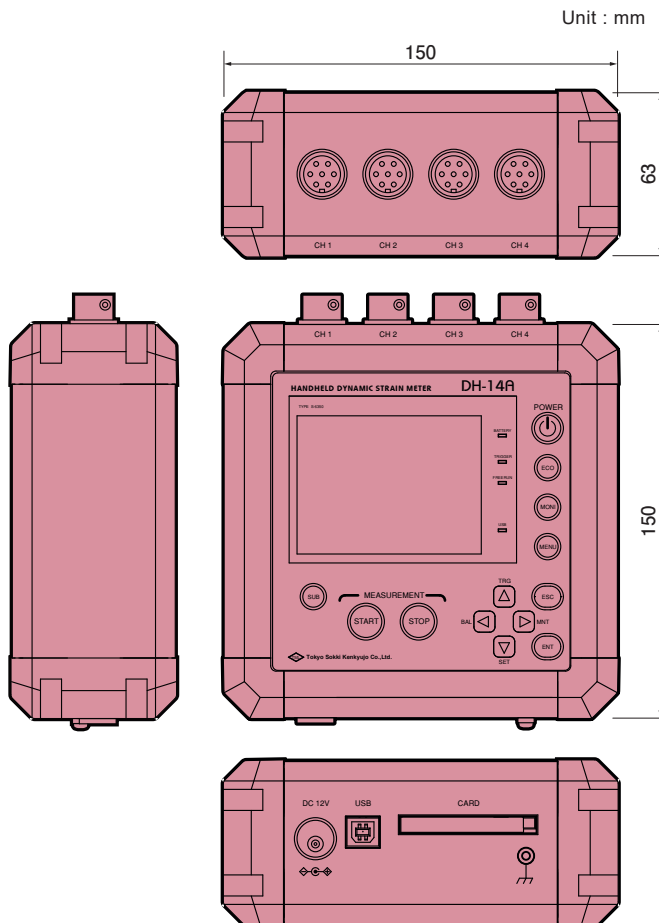
Effective for operation and noise checks of acceleration transducers, pressure transducers, etc. before starting measurement.



Acceleration transducer

Pressure transducer

## Outer View



Unit : mm

## Option (Related products)

### Bridge box SB series



Used for connecting strain gauges in quarter bridge 3-wire, half bridge, etc. Fixed resistors for configuring a Wheat stone bridge circuit are inside.

### TEDS compatible transducer



When TEDS compatible transducers are connected, parameters such as capacity and rated output of the transducers are automatically read and set.

### Thermocouple adaptor TA-01KT

This is an adaptor to enable temperature measurement using K and T type thermocouple.



Specifications  
 Number of measuring point : 1  
 Applicable thermocouple K : -50~+100°C  
 T : -50~+300°C  
 Response time : 20msec or less (0 → 90%)

### Attenuator cable CR-4110

Attenuator cable CR-4110 is used for inputting voltage signal. The measuring range of voltage is  $\pm 20V$  when this cable is used.

## Specifications

### Measurement part

Number of channels	4 channels	
Input	Strain Voltage (using optional attenuator cable CR-4110)	
Strain measurement		
Applicable gauge resistance	120 - 350Ω	
Bridge excitation	DC2V or DC0.5V	
Measurement range	±20000×10 <sup>-6</sup> strain (with 2V excitation) ±80000×10 <sup>-6</sup> strain (with 0.5V excitation)	
Measurement accuracy	±0.2%FS	
Voltage measurement (using optional attenuator cable CR-4110)		
Measurement range	±20V	
Measurement accuracy	±0.3%FS	
Low pass filter	10, 30, 100, 300Hz and 1kHz (Bessel character)	
Frequency response	DC - 1kHz (-3dB±1dB)	
Temperature coefficient		
Stability on zero	±1×10 <sup>-6</sup> strain / °C	
Stability on sensitivity	±0.01%rdg / °C	
Balancing range	±10000×10 <sup>-6</sup> strain	
Balancing accuracy	Within ±3×10 <sup>-6</sup> strain	
Balancing time	Approx. 1 sec	
Resolution	Strain : 1×10 <sup>-6</sup> strain Voltage : 1mV	
Sampling method	Simultaneous sampling	
Sampling speed	1 channel mode : 50μsec (20kHz) at the fastest 2 channel mode : 100μsec (10kHz) at the fastest 4 channel mode : 200μsec ( 5kHz) at the fastest Max. 1s (trigger measurement and free run measurement)	
Measurement functions	Trigger measurement, Free run measurement, Open check	

### Display part

Display	3.5-inch color LCD display	
Resolution	320×240 dots	
Menu	Settings, File measurement, etc.	
Numeric monitor	Displays selected channels Monitor value, ± peak values and unit	
Wave monitor	Displays selected channels Monitor value, X-scale setting, Y-scale setting and GND level setting	
Data file	Wave display, Numerical value display	
LED	BATT	Remaining battery
	TRG	in trigger measurement
	FREE	in free run measurement

### Setting part

Channel setting	Coefficient, point, unit, measured/direct, and TEDS sensor reading
Trigger setting	
Trigger mode	SINGLE or CONTINUE
Trigger level	- full scale to + full scale
Trigger slope	UP or DOWN
Data size	1000 data to 100M data
Pre area	Configurable from 0% to 100% in increments of 10% (Max. 256k data (1 channel))
Power saving ECO modes	5 modes

### Recording part

Recording medium	Compact Flash™ Memory Card 512 megabytes to 2 gigabytes (supplied by TML)
Recording format	Conforms to DADiSP
File created	Max. 255 files

### General part

Power supply	4 AA-size (LR6) alkaline batteries AC adaptor (Optional)
Vibration tolerance	29.4m/s <sup>2</sup> (50Hz 0.6mmp-p) three-directional
Operating temperature and humidity range	-10 to +50°C, RH85% or less (No condensation) *Do not exceed the operating temperature limit of dry cells if used.
External dimensions	150(W)×63(H)×150(D) mm (Except projecting parts)
Weight	Approx. 1 kg

### Standard accessories

Operation manual	1
CD-ROM for DH-714 (wave view software)	1
AA-size (LR6) alkaline batteries	4
Shoulder bag	1
Inspection sheet	1



Shoulder bag

### Option Items (Related products)

AC adaptor CR-1867	Connected to AC 100-240V for power supply.
Attenuator cable CR-4110	Used for voltage measurement.
Thermocouple adaptor TA-01KT	Temperature measurement adaptor for T/K thermocouple.
Bridge box SB series	Used to connect strain gauge by quarter bridge method etc.

The contents of this catalog are subject to change without prior notice.  
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Approval Certificate **ISO9001**  
Design and manufacture of  
strain gauges, strain measuring  
equipment and transducers



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