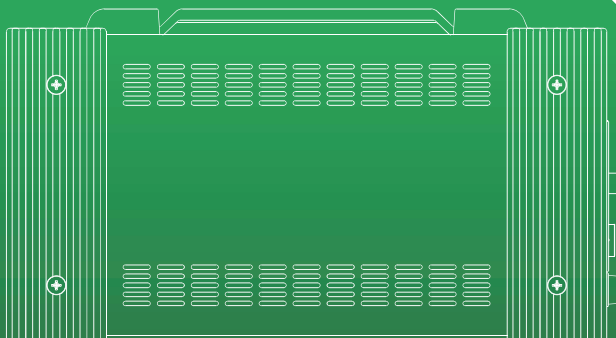
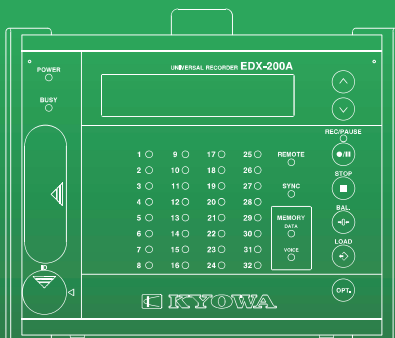
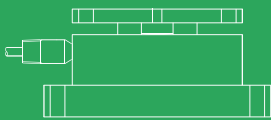
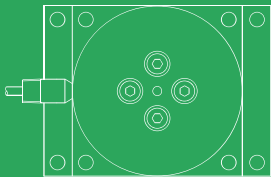
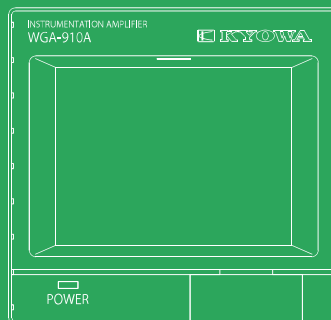
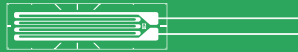
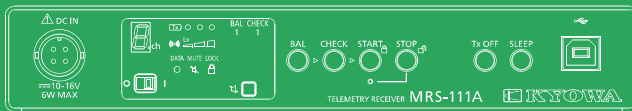


Move into the future with reliable measurements



Applications of the industrial machinery

Applications of the industrial machinery



Supporting improvement of industrial machinery safety performance through measurement in safety test.



Application of the industrial machinery

Factories

P.2-5

- Load measurement of production systems
- Controlling mixture ratios of ingredients
- Controlling tightening torque of nuts
- Controlling pressurization of components during mounting
- Durability confirmation testing of switches
- Abnormal measurement with the injection molding equipment
- Strength measurement of the hollow aluminum square pipes
- Monitoring press load wirelessly
- Load management of mobile cranes
- Measuring press-fit load
- Controlling press loads
- Strain gages for measuring strain and stress on a PCB
- Production inspection of OA equipment

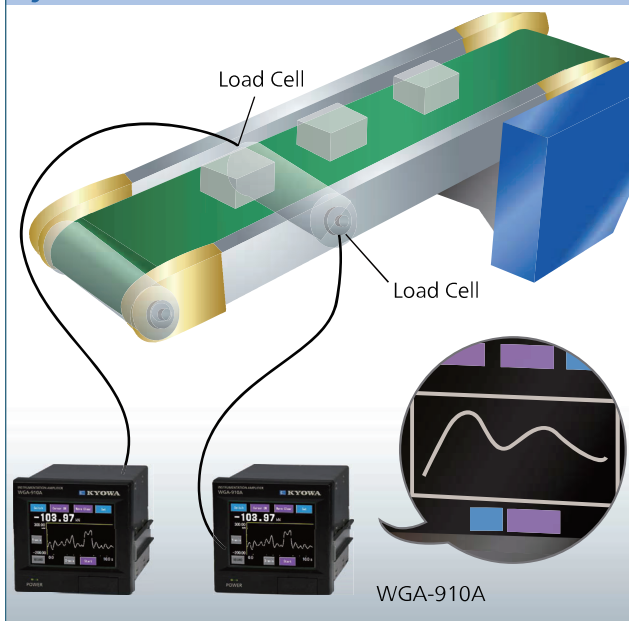
Research facilities

P.5-9

- Performance testing of pumps
- Performance testing of small motors
- Tensile testing of complex materials
- Stress measurement of test piece
- Measurement of strain during breaking experiment
- Measurement of material's bending stress
- Impact test for glass
- Drop testing of electrical appliances
- Drop testing of digital cameras
- Drop testing of mobile phones and tablet PCs
- Stress measurement of PCB during mounting
- Drop and impact testing of lithium-ion batteries
- Drop testing of packaged consumer electronics
- Measurement pipe stress of air conditioners
- Pressure measurement of robot fingertips
- Dynamic evaluation of robots

Factories

Load measurement of production systems

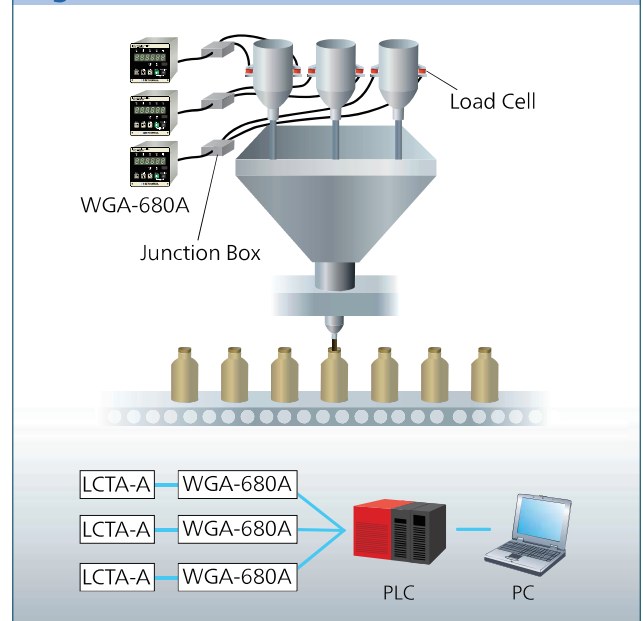


Attention!

Instrumentation Amplifier
WGA-910A

Shows measurement results in colored waveform-displays.
Useful to measure conveyor loads.

Controlling mixture ratios of ingredients



- Thin Load Cell
"Multi Force Sensor"
LCTA-A



- Instrumentation Amplifier
WGA-680A



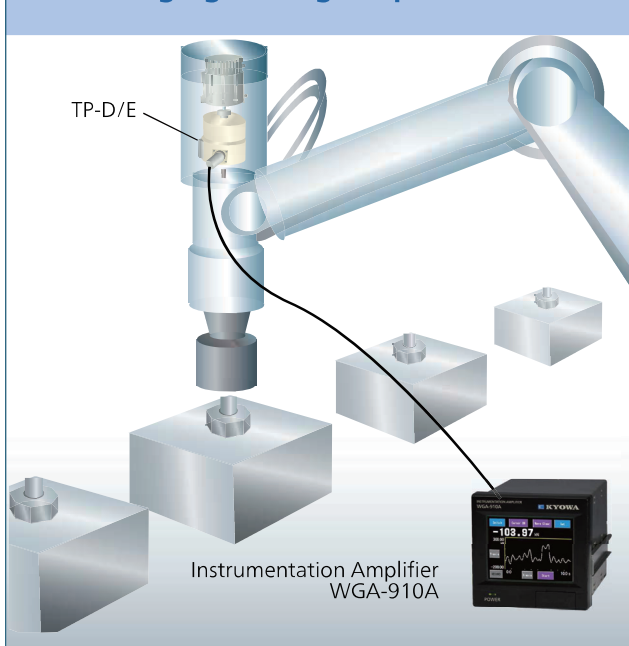
CC-Link

Attention!

Instrumentation Amplifier
WGA-680A

Measuring the weight of ingredients, the mixture ratios are controlled automatically through CC-Link devices. The weight is indicated on the front panel of the instrumentation amplifiers.

Controlling tightening torque of nuts

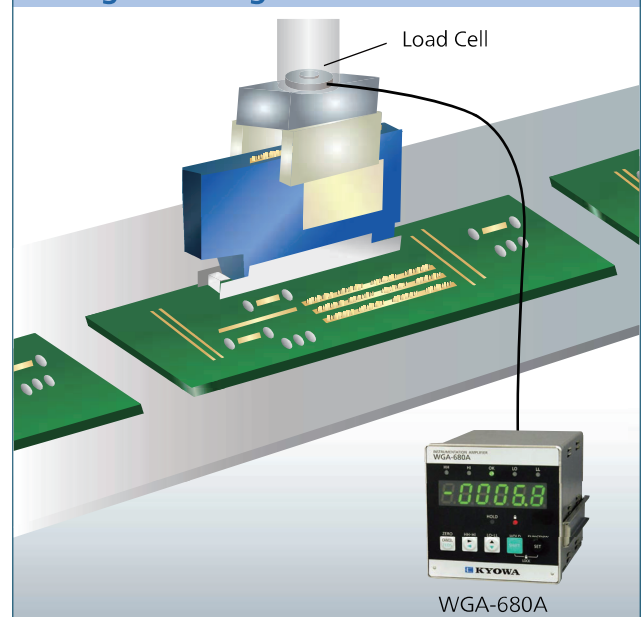


Attention!

Torque Transducer
TP-D/E

Generates a large output with low capacities and low torques, most appropriate for the measurement of such parameters as tightening torque.

Controlling pressurization of components during mounting

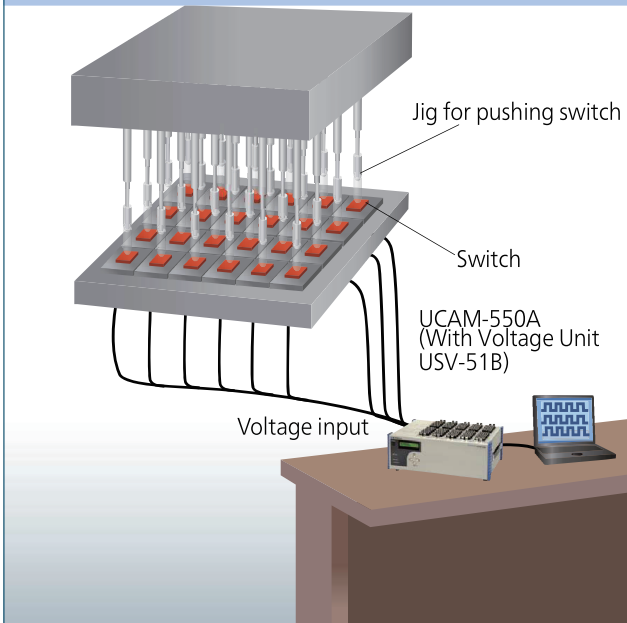


Attention!

Instrumentation Amplifier
WGA-680A

Can be used in the pressurization of general precision machinery during component mounting.

Durability confirmation testing of switches



Fast Data Logger UCAM-550A

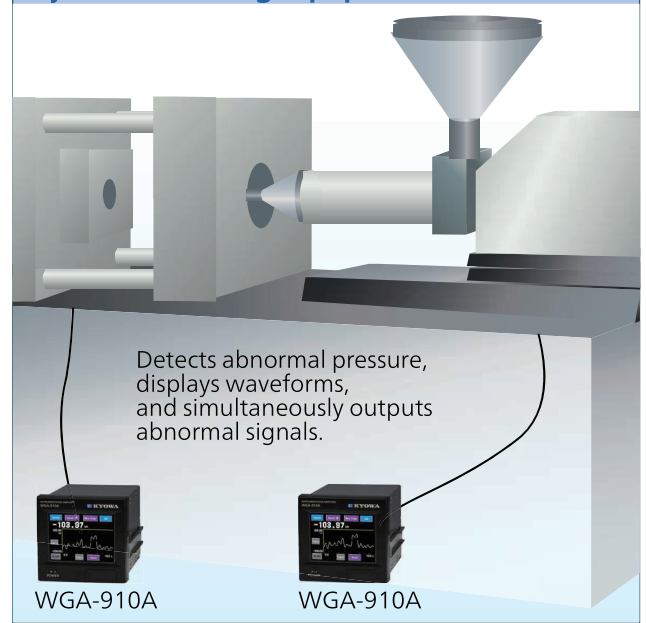


Attention!

UCAM-550A

- Max. channels of 1000 are available.
- Simultaneous sampling frequency of 50Hz, therefore, this enables quality confirmation for lots of switches, and cost down.

Abnormal measurement with the injection molding equipment



Instrumentation Amplifier



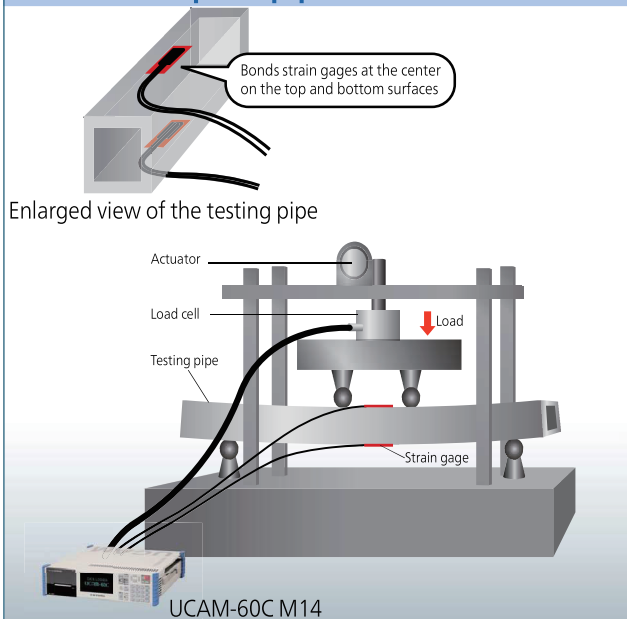
WGA-910A

Attention!

WGA-910A

- Comparator: 5
- Comparison results can be color-coded.
- Control input: 9
- Control output: 10
- Interface: RS-232C
- Data storage: SD card

Strength measurement of the hollow aluminum square pipes



Data Logger UCAM-60C M14

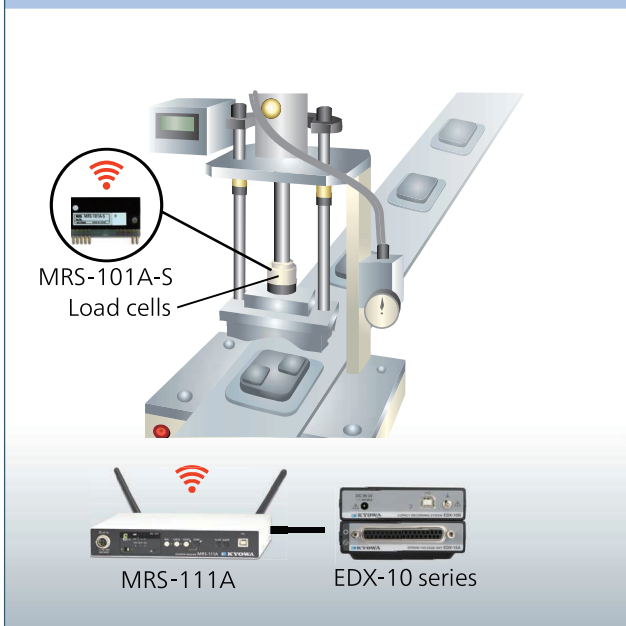


Attention!

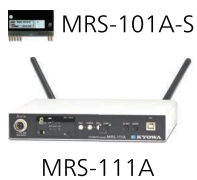
UCAM-60C M14

- Eliminates visual error from reading analog meter
- Displays in digital data can be saved
- Enables to carry out consecutive tests

Monitoring press load wirelessly



•Digital Telemeter



Attention!

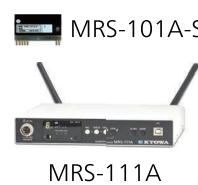
MRS-100 Series

Transmits data a long range up to 50 m (line-of-sight) in environment without obstacle objects, and also has flexibilities (ex. using expansion cable, etc.) based on measurement environments. Small transmitter is easy to mount in narrow space and improves the productivity.

Load management of mobile cranes



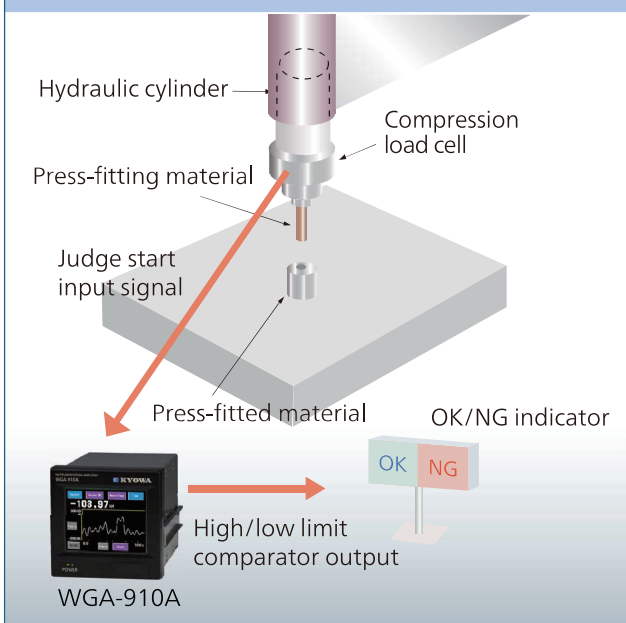
•Digital Telemeter



Attention!

Transmits data a long range up to 50 m (line-of-sight) in environment without obstacle objects, and also has flexibilities (ex. using expansion cable, etc.) based on measurement environments. You are also able to select the extension cable for a receive antenna for target environments.

Measuring press-fit load



•Instrumentation Amplifier



•Compact Tension/Compression Load Cell

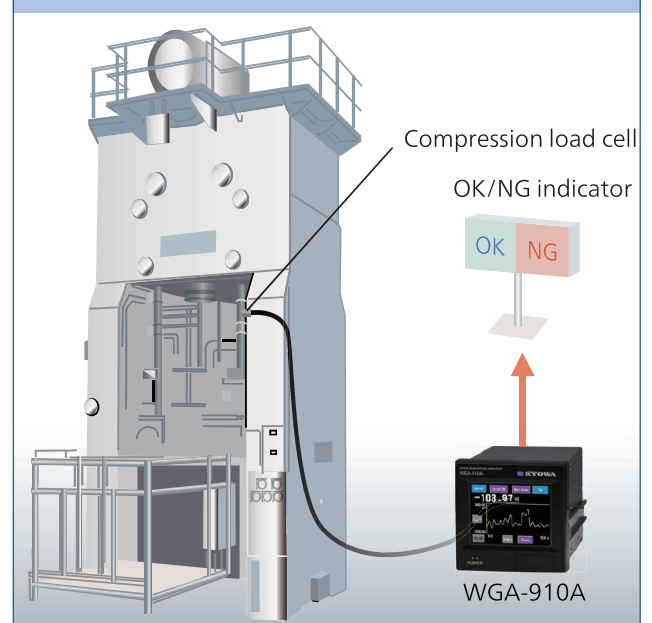


Attention!

WGA-910A

Displays pressure loads, in numerical values and waveforms, at the same time.

Controlling press loads



•Instrumentation Amplifier



•Compact Tension/Compression Load Cell

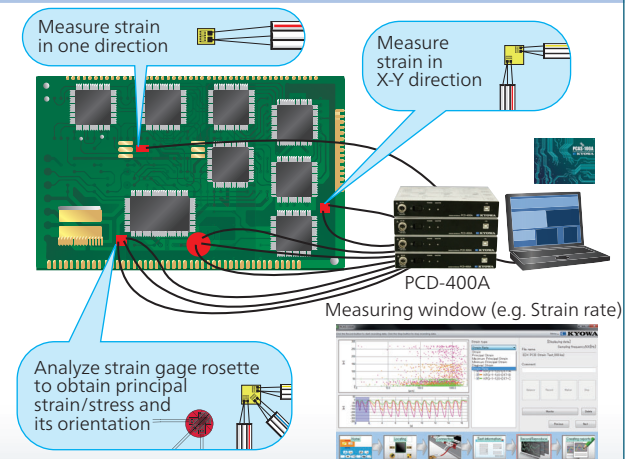


Attention!

WGA-910A

Displays pressure loads, in numerical values and waveforms, at the same time.

Strain gages for measuring strain and stress on a PCB



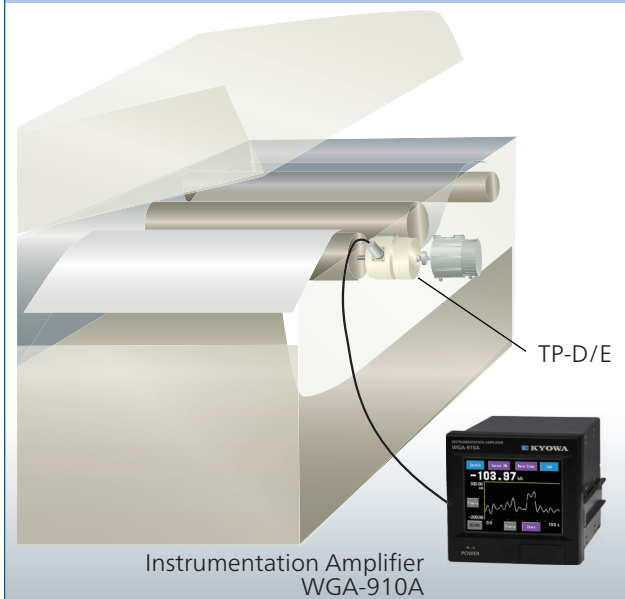
Attention! Strain gages

- Measure strain on a PCB during mounting, cutting, assembling, etc.

PCAS-1000A

- Specialized for measuring strain rate, etc. described in IPC/JEDEC-9704A
- Even a beginner can use the software easily
- Most suitable for measuring strain (PCD-400A)
- Stacked 4 units of PCD-400A for a system up to 16 channels

Production inspection of OA equipment



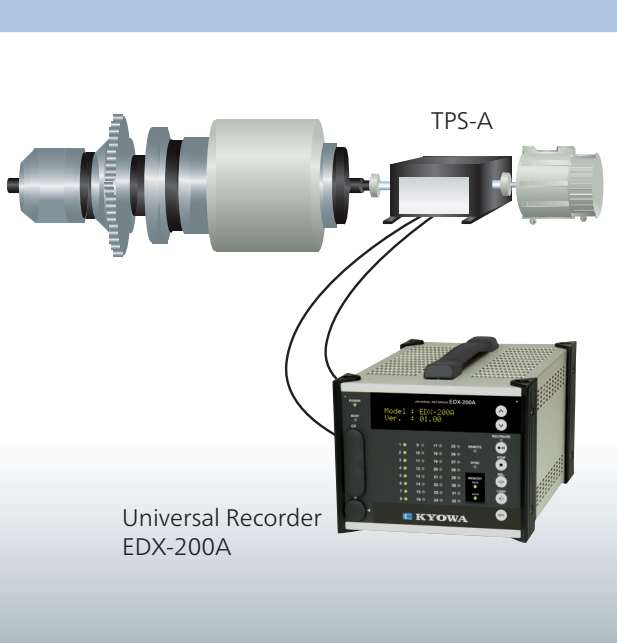
Attention!

Torque Transducer TP-D/E

Enables the inspection of printer rollers for rotation when the compact and low-capacity torque transducer is used with a WGA-910A.

Research facilities

Performance testing of pumps

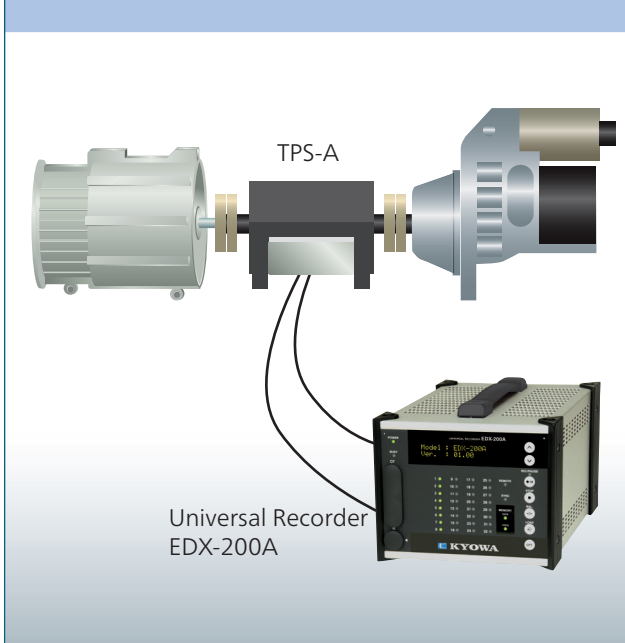


Attention!

Built-in Amplifier Torque Transducer TPS-A

Furnished with a long-awaited pulse output. This noncontact unit is maintenance-free. It is useful for such tests as oil pump performance testing.

Performance testing of small motors

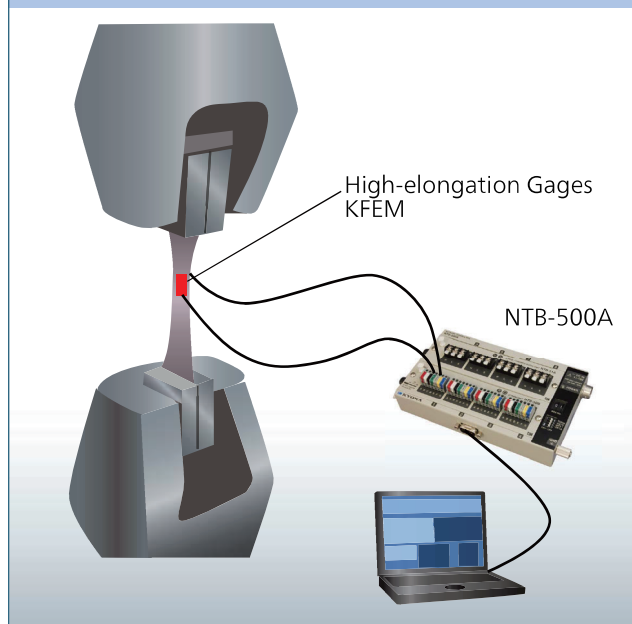


Attention!

Built-in Amplifier Torque Transducer TPS-A

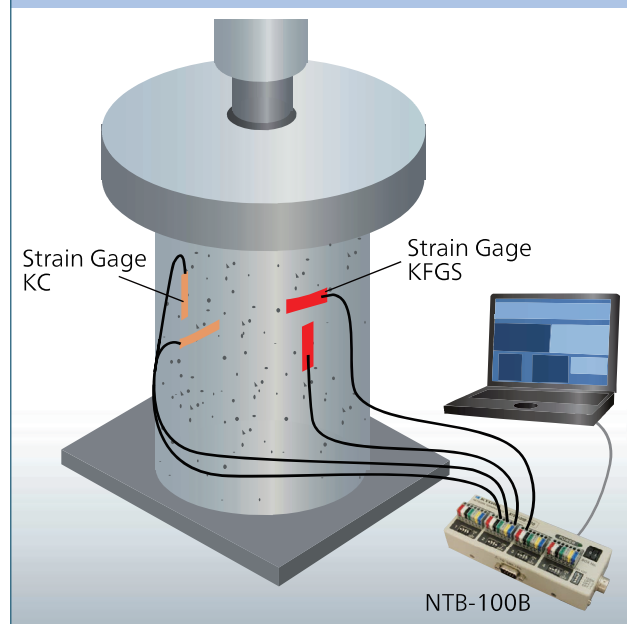
Is compact and lightweight and built-in amplifier. Helps reduce time for testing preparation and enables to measure rotations and calculate horsepower. Appropriate for the development of small motors.

Tensile testing of complex materials



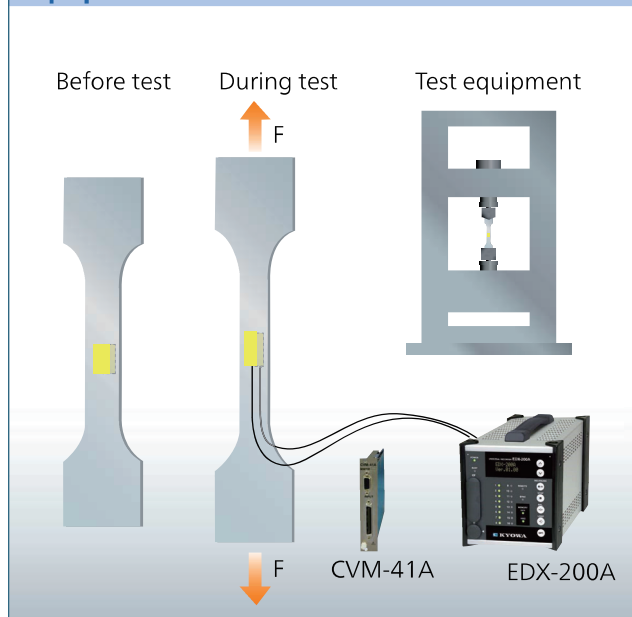
Attention! Medium Speed Network Terminal Box
NTB-500A
Enables to directly measure strain gages for large strains.

Stress measurement of test piece



Attention! Network Terminal Box
NTB-100/200 Series
Is highly portable and capable of making measurements once connected to a PC.

Measurement of strain during breaking equipment

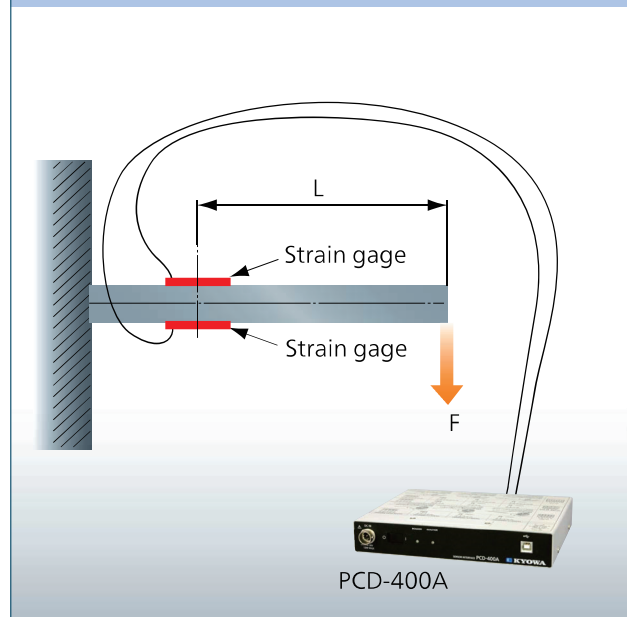


- Ultrahigh-elongation Foil Strain Gages KFEM
- Strain/Voltage/Acceleration Measurement Card CVM-41A
- Universal Recorder EDX-200A

Attention! KFEM and EDX-200A

- Enable to measure strain from elastic domain to plastic domain, even up to break point.
- Enable to measure strain up to from 20% to 30% at high resolution of 24-bit.
- Most suitable for strength and break test.

Measurement of material's bending stress

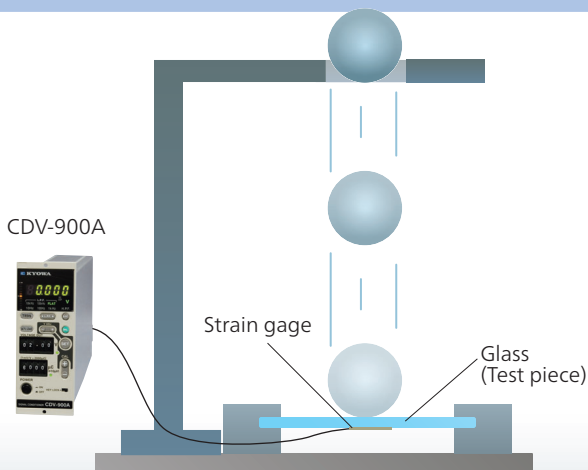


- General-purpose Foil Strain Gages KFGS
- Sensor Interface PCD-400A

Attention! KFGS and PCD-400A

- Can measure material's bending strain.
- Improving test accuracy by forming a half bridge with 2 gages on the top and bottom of the test-piece to cancel tension/compression strain.
- Being a carrier wave type sensor interface that strong against noise, PCD-400A is most suitable for strain measurement.

Impact test for glass



Attention

CDV-900A

- Responds fast, thus suitable for glass impact tests.
- Useful for confirming the strength of glass
- User-friendly
- Outputs voltage which can connect different types of recorders.

- Signal Conditioner CDV-900A



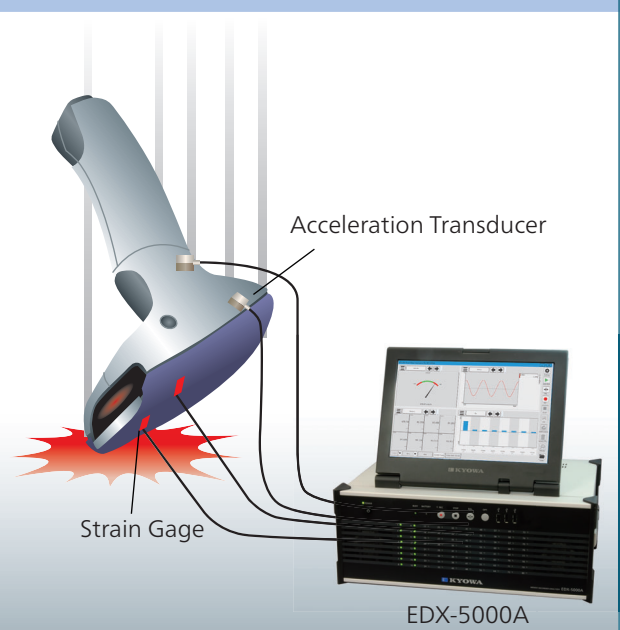
- General-purpose Foil Strain Gage KFGS



- Semiconductor Strain Gage KSPB



Drop testing of electrical appliances



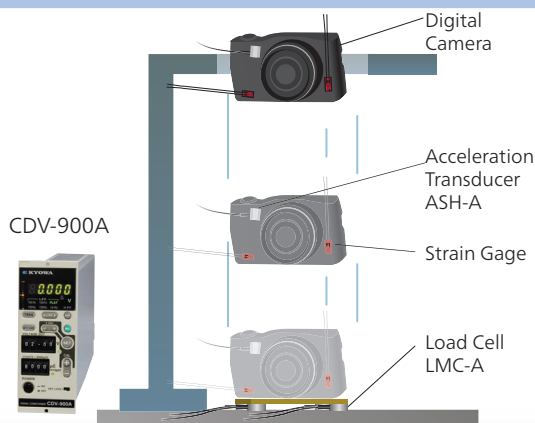
Attention!

Memory Recorder/Analyzer

EDX-5000A

Can conduct 32ch/200 kHz sampling. This system can perform high-speed sampling even during multichannel measurements in such tests as the drop testing of barcode scanners.

Drop testing of digital cameras



Attention

CDV-900A

- Responds fast, thus suitable for glass impact tests.
- Useful for confirming the impact against dropping digital cameras
- User-friendly
- Outputs voltage which can connect different types of recorders.

- Signal Conditioner CDV-900A



- Small-sized High Frequency Response Acceleration Transducer

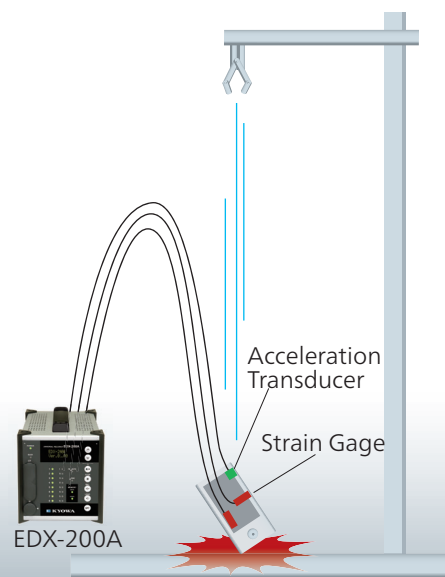


- Small-sized Compression Load Cell



LMC-A

Drop testing of mobile phones and tables PCs



- Universal Recorder



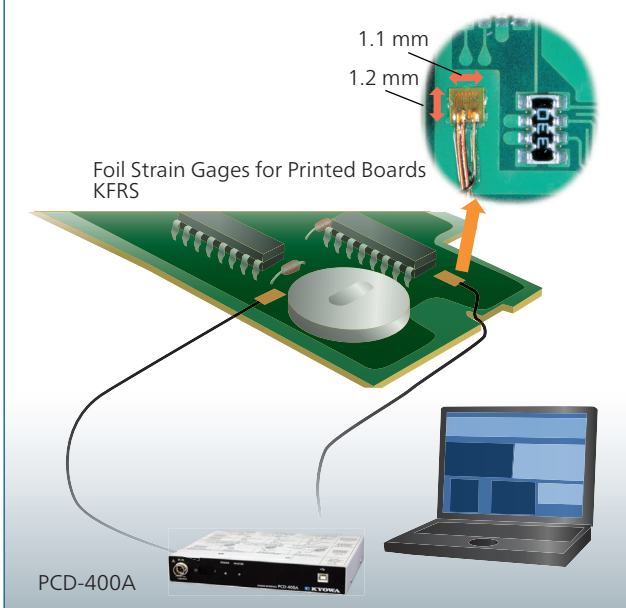
EDX-200A

Attention!

EDX-200A

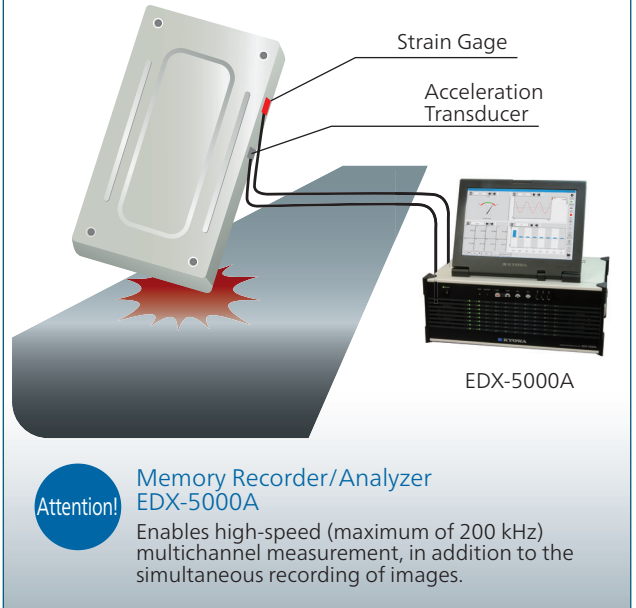
- Enables to perform drop tests at labs.

Stress measurement of PCB during mounting



Attention! **Sensor Interface PCD-400A**
Enables to conduct strain measurement with ease by connecting to a PC via USB interface.

Drop and impact testing of lithium-ion batteries

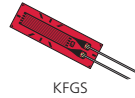


Attention!

Memory Recorder/Analyzer EDX-5000A

Enables high-speed (maximum of 200 kHz) multichannel measurement, in addition to the simultaneous recording of images.

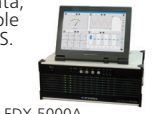
- **Strain Gage**
The strain gage is a sensor used to detect minimal changes (strains) in mechanical dimensions.
- **Acceleration Transducer**
Measures impacts of up to 1000 G.
- **Memory Recorder/Analyzer**
Enables synchronous recording and reproduction of measurements and image data; compatible with TEDS.



KFRS

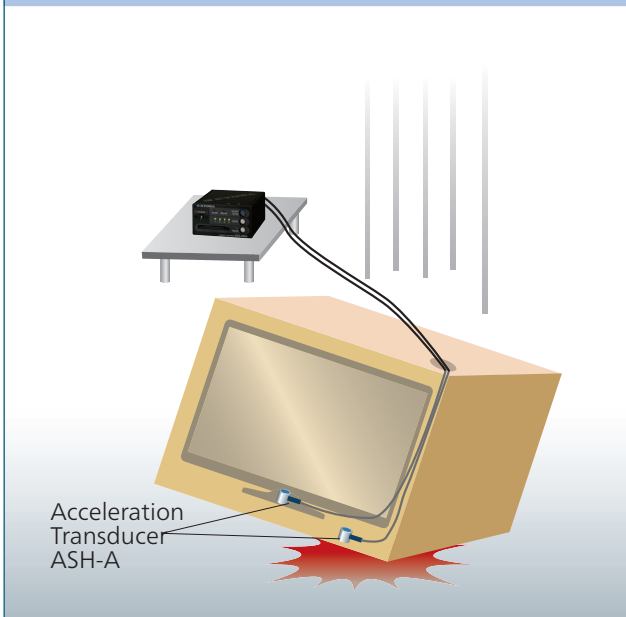


ASH-A



EDX-5000A

Drop testing of packaged consumer electronics



- **Compact Recorder EDS-400A**

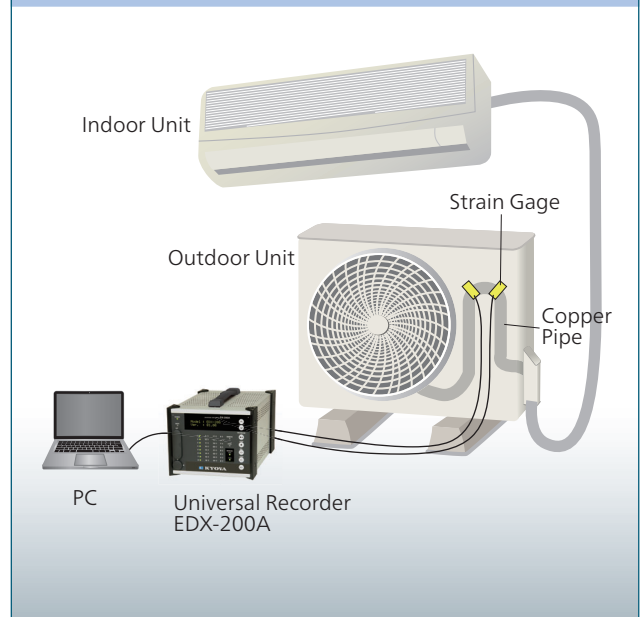


Attention!

EDS-400A

- Simultaneous measurement of impacts given to the product and the package by each drop test
- Easy installation thanks to the compact stand-alone design
- High-speed sampling for data acquisition without missing any instantaneous phenomenon (100 kHz/ch, 20 kHz/4-ch)

Measurement pipe stress of air conditioner



- **Universal Recorder**



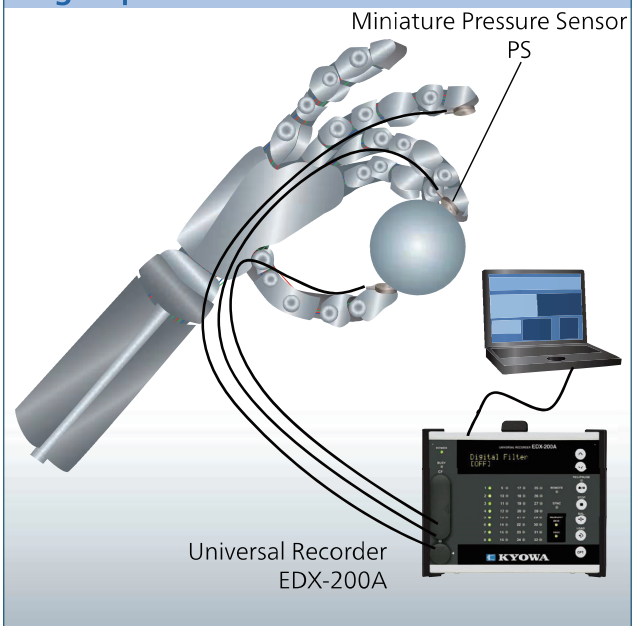
EDX-200A

Attention!

EDX-200A

- Measure stress on pipes due to vibration of air-conditioner compressors.
- Dramatically reduce test time.

Pressure measurement of robot fingertips

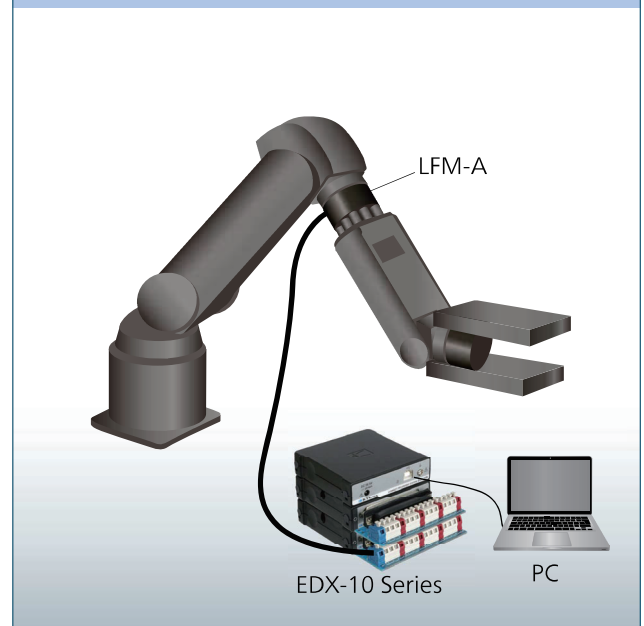


Attention!

Miniature Pressure Sensor PS

Measures robot fingertip force from inside the fingertip.

Dynamic evaluation of robots



Compact 6-component Force Transducer LFM-A



Attention!

- Measure 3 axes force and moment around each axis
- Help for dynamic evaluation of robots
- Being hollow struture, easily wire inside the robot

Compact Recording System EDX-10 Series



You can count on Kyowa.

Feel free to contact us,
if there is something you would like to know or
do not understand about Kyowa products.



Sales Network



Americas Region

KYOWA AMERICAS, Inc.
TEL: +1-248-348-0348
E-mail: sales@kyowa-americas.com
Website: www.kyowa-ei.us

China

KYOWA ELECTRONIC(SHANGHAI)TRADING CO.,LTD.
TEL: +86-21-64477770
E-mail: support-cn@d1.kyowa-ei.co.jp
Website: www.kyowa-ei.cn

Thailand

KYOWA DENGYO(THAILAND) CO.,LTD.
TEL: +66-2-117-3760
E-mail: sales-thailand@kyowa-ei.co.th
Website: www.kyowa-ei.co.th

Other Countries or Regions

Please visit below URL.
Website: www.kyowa-ei.com

KYOWA ELECTRONIC INSTRUMENTS CO., LTD.

Overseas Department:
3-5-1, Chofugaoka, Chofu, Tokyo 182-8520 Japan
TEL; +81-42-489-7220 FAX: +81-42-488-1122
E-mail: kyowaoverseas.hp@d1.kyowa-ei.co.jp
Website: www.kyowa-ei.com



Safety Precautions

Be sure to observe the safety precautions given in the instruction manual, in order to ensure correct and safe operation.

- Specifications are subject to change without notice for improvement.



JQA-0821
JQA-EM4824

Manufacturer's Representative