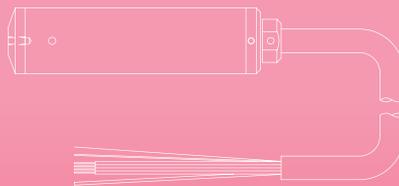
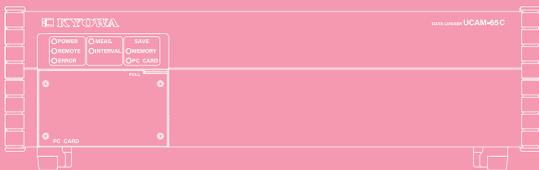
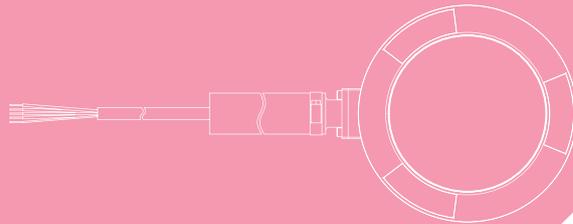
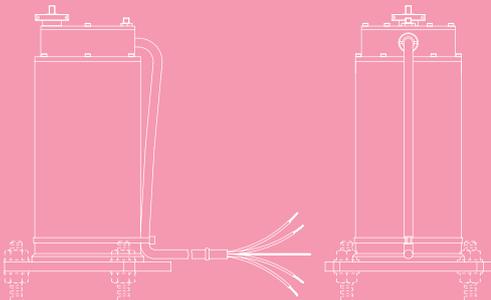
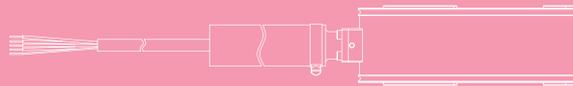
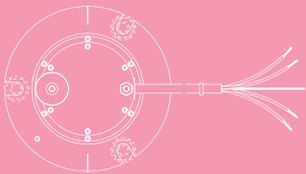


Move into the future with reliable measurements



Applications of the civil engineering and construction

Applications of the civil engineering and construction



Supporting improvement of civil engineering and construction safety performance through measurement in safety test



Applications of the civil engineering and construction

Reclaimed lands ----- P.2

- Evaluation testing of secondary concrete products
- Measurement of revetment strain

Buildings----- P.2-3

- Stress measurement of test piece
- Testing of quake-absorbing structures
- Strength testing of building materials
- Vibration measurement of buildings during an earthquake

Research facilities----- P.3

- Static load-carrying testing
- Concrete compressive strength test

Bridges ----- P.4

- Scour monitoring of bridge supports
- Crack monitoring system
- Measurement of bridge strain
- Vibration test on cables of suspension bridges
- Natural frequency measurement of structures

Construction fields----- P.5

- Stress measurement of cranes and other construction machinery
- Experiment of high-strength and high-fluidity concrete

Tunnels ----- P.6

- Stress measurement of tunnel supports and covering concrete
- Monitoring the state of ceiling boards
- Damage detectio of tunnel facility

Banks----- P.7

- Dynamic observation of earth filling

Urban development----- P.8

- Axial tension measurement of short struts
- Deformation measurement in neighboring construction

Factories ----- P.8

- Load test fo utility poles

Landslides----- P.9

- Observation of landslides
- Tension measurement of anchors to the earth retaining wall
- Rockfall detection of slope

Airports----- P.10

- Subsidence measurement of airport runways

Floodgates----- P.10

- Observation of water levels in rivers

Bedrock ----- P.11

- Observation of bedrock displacement

Dams ----- P.11-12

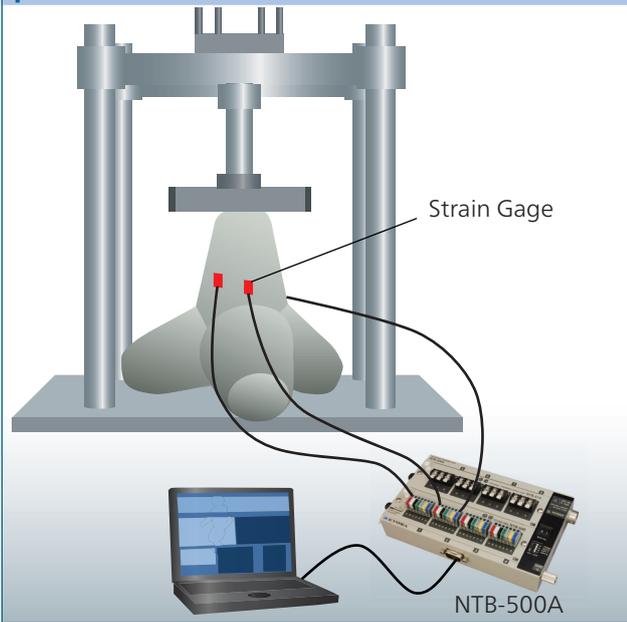
- Equipment for observing the behavior of dam bodies
- Dam body behavior observation instruments (concrete dam)
- Observation of rock-fill dam behavior

Towers----- P.12

- Monitoring of towers

Reclaimed lands

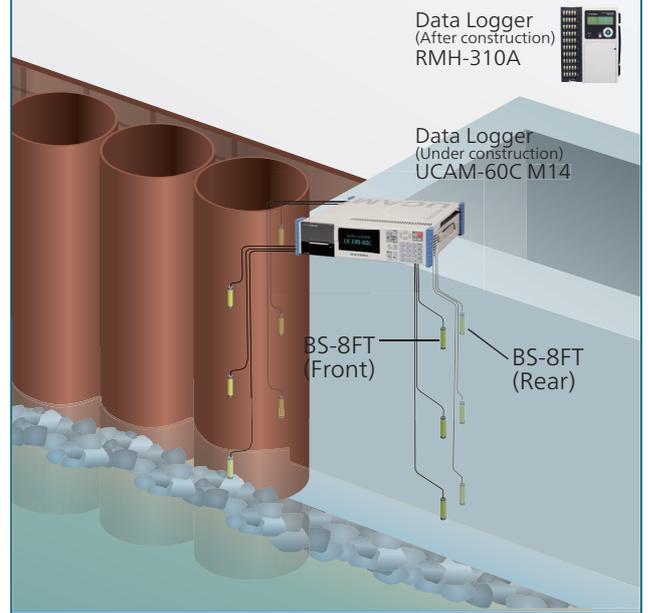
Evaluation testing of secondary concrete products



Attention!

Medium Speed Network Terminal Box NTB-500A
Enables to add up to 64 channels, most appropriate for material testing requiring multipoint measurement.

Measurement of revetment strain



● Small-sized Strain Transducer BS-8FT



● Data Logger UCAM-60C M14



● Digital Strain Recorder RMH-310A



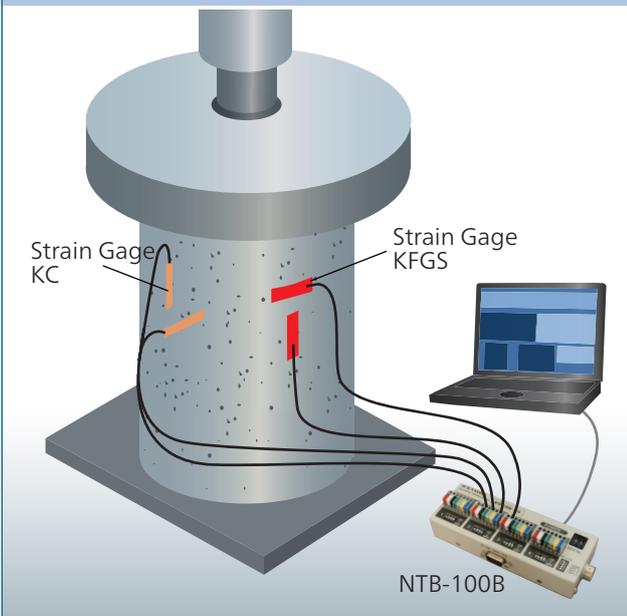
Attention!

BS-8FT

- Can measure strain on both revetment caisson and revetment pipes.
- Measure strain on both revetment caissons and pipes under construction, and long-term strain of tunnel after construction to help safety check and long-term maintenance.

Buildings

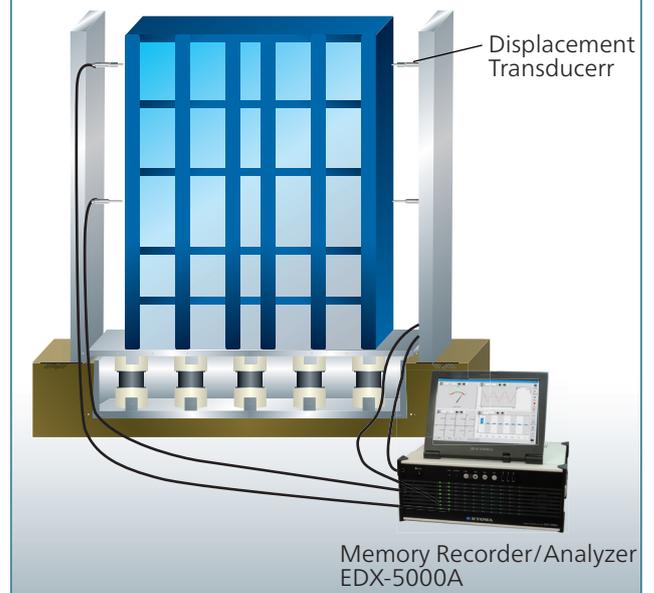
Stress measurement of test piece



Attention!

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

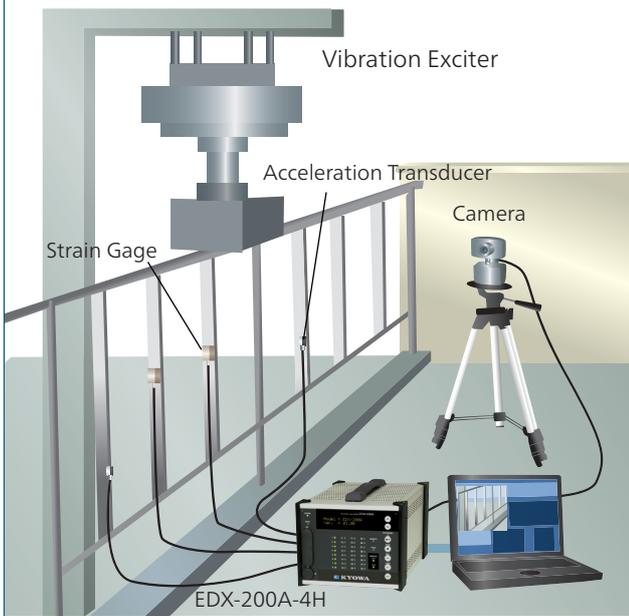
Testing of quake-absorbing structures



Attention!

Memory Recorder/Analyzer EDX-5000A
Enables up to 80-channel, 10-unit synchronous measurement (800 channels or more).

Strength testing of building materials

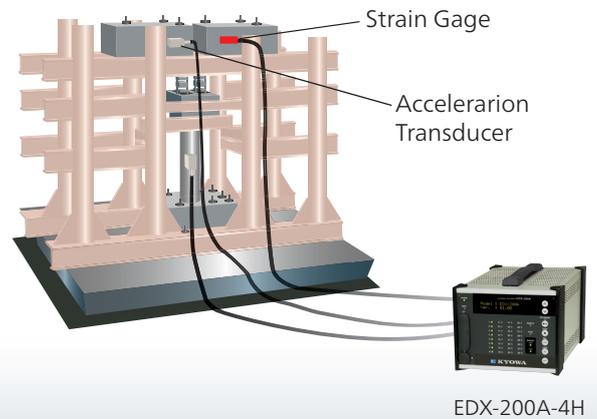


Attention!

Universal Recorder EDX-200A

Enables to record images and videos, check images with ease, make simultaneous measurement of aluminum and other building materials for load and displacement, and collect images.

Vibration measurement of buildings during an earthquake



● Universal Recorder



EDX-200A-4H

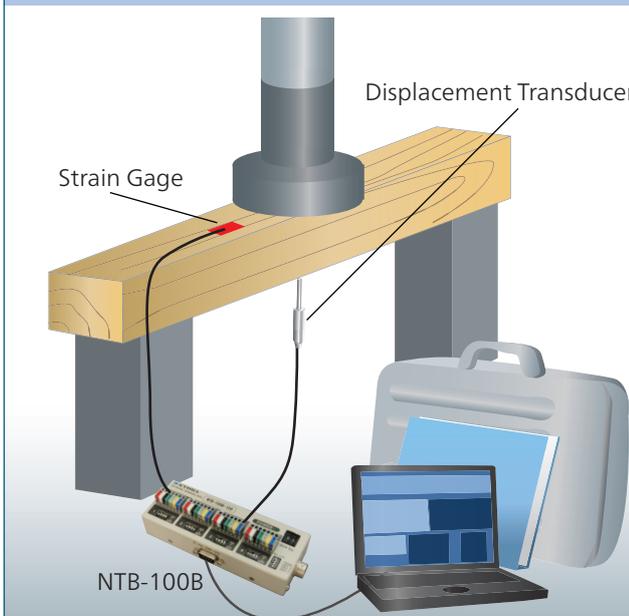
Attention!

Universal Recorder EDX-200A

- Enables high/low-speed dual sampling
- Sensor-based sampling to limit the volume of recorded data

Research facilities

Static load-carrying testing

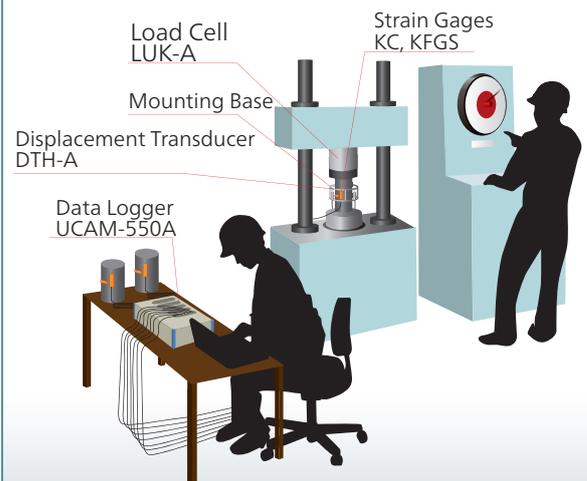


Attention!

Network Terminal Box NTB-100/200 Series

Is compact and lightweight and highly portable; most appropriate for laboratory or on-site testing.

Concrete compressive strength test



Attention!

- Being long gage length, enables to test average strain on concrete
- Most suitable for concrete compressive strength tests

● General-purpose Foil Strain Gage
KFGS-30-120-C1-11



● Wire Strain Gage
KC



● Tension/Compression Load Cell
LUK-A



● Displacement Transducer
DTH-A

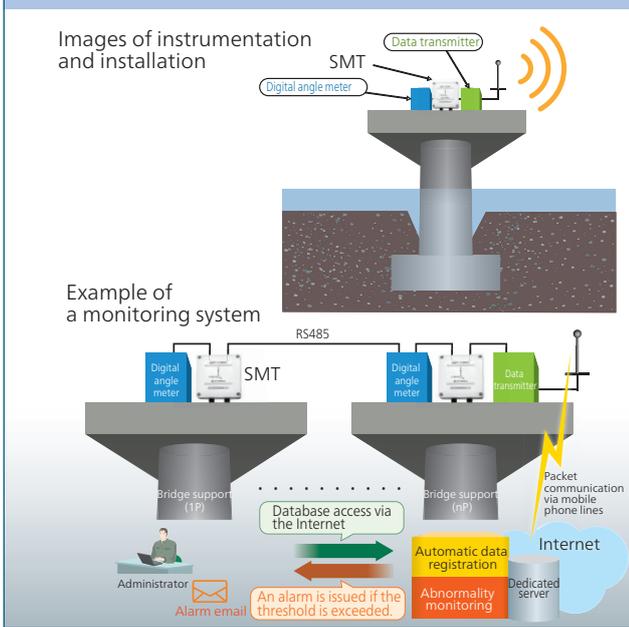


● Fast Data Logger
UCAM-550A



Bridges

Scour monitoring of bridge supports



● Natural Frequency Meter



SMT-110AS

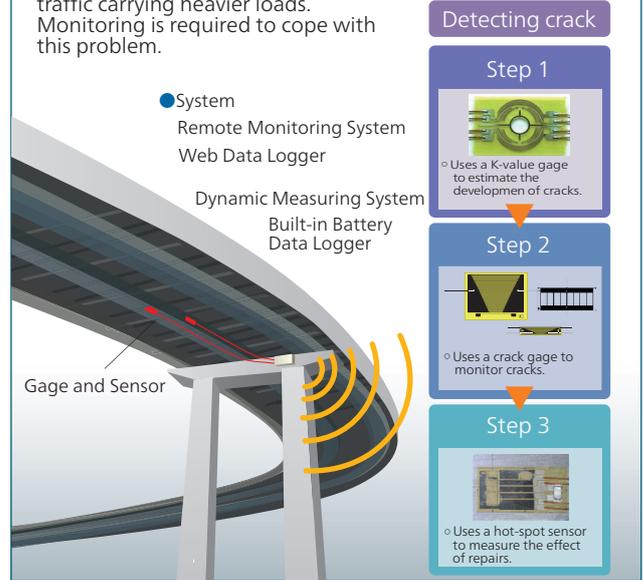


SMT-110AS Series

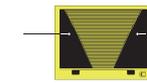
- Small and lightweight
- Inexpensive
- Enables long-term monitoring.
- Real-time measurement of natural frequencies

Crack monitoring system

In recent years, steel plate decks have experienced more severe fatigue damage resulting from a greater amount of traffic carrying heavier loads. Monitoring is required to cope with this problem.



● Crack Gage



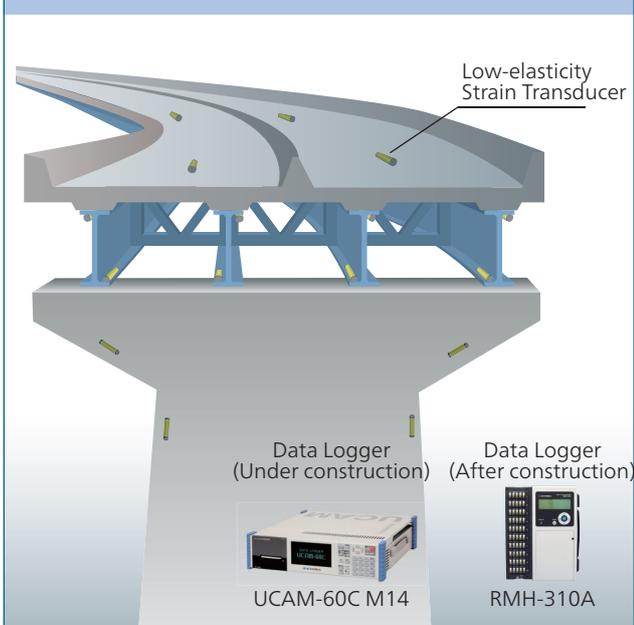
KV Series



KV Series

- Enables the monitoring of fatigue damage and cracks in steel plate decks.

Measurement of bridge strain



● Low-elasticity Strain Transducer BSL-A-90TSA2



BSL-A-90TSA2

• Can measure strain both inside concrete-bridge piers and under concrete-floorboards, from young material age.

● Data Logger UCAM-60C M14



• Is installed in bridge girders and measures a long-term strain to help the verification of the effectiveness about the safety checking, repairing and reinforcing.

● Digital Strain Recorder RMH-310A



Vibration test on cables of suspension bridges



● Signal Conditioner CDA-900A



CDA-900A

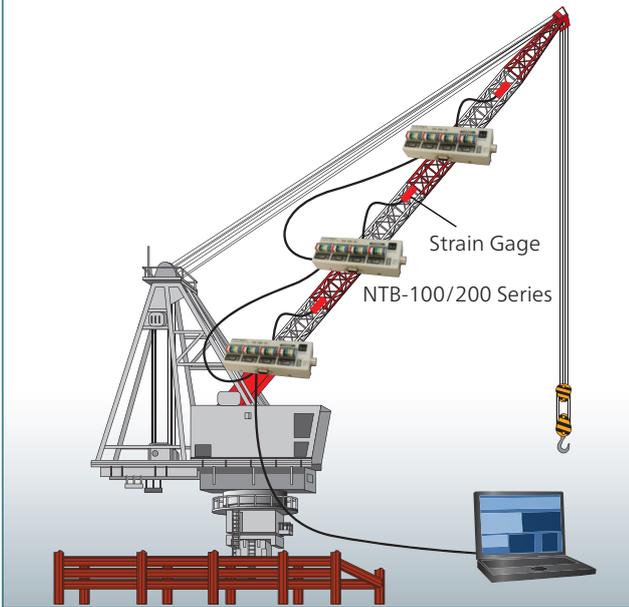
- Suitable for long distance measurement of up to 2 km.
- Useful for confirming the safety of bridges
- User-friendly
- Output voltage which can connect different types of recorders.

● Small-sized Small Capacity Acceleration Transducer AS-GB



Construction fields

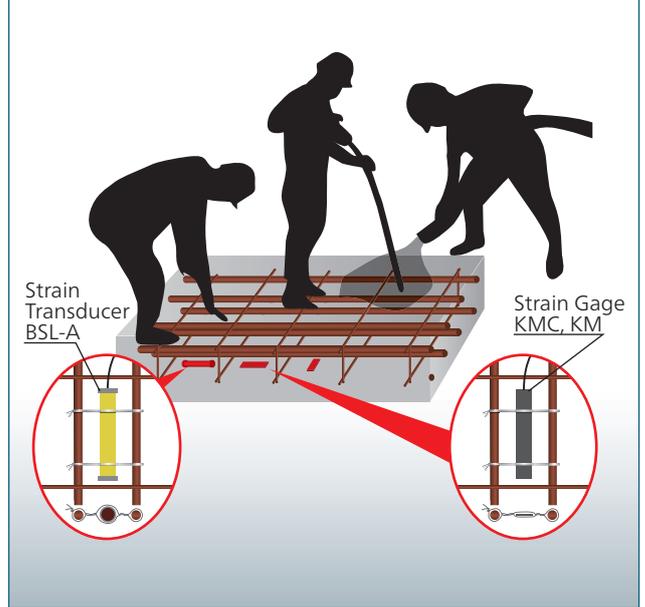
Stress measurement of cranes and other construction machinery



Network Terminal Box NTB-100/200 Series

Can be distributed in multiple locations, eliminating the need to extend the sensor cable to enable flexible work.

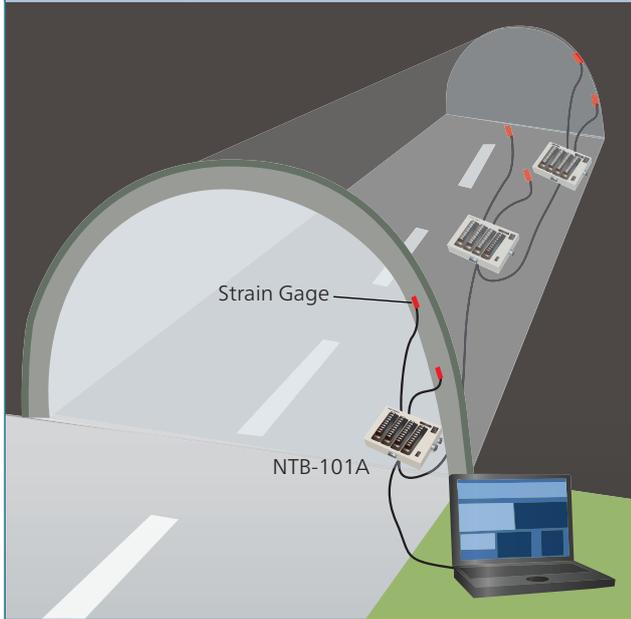
Experiment of high-strength and high-fluidity concrete



- Enables to test strain of self-shrinkage concrete soon after pouring
- Useful for experiment of high-strength and high-fluidity concrete

Tunnels

Stress measurement of tunnel supports and covering concrete

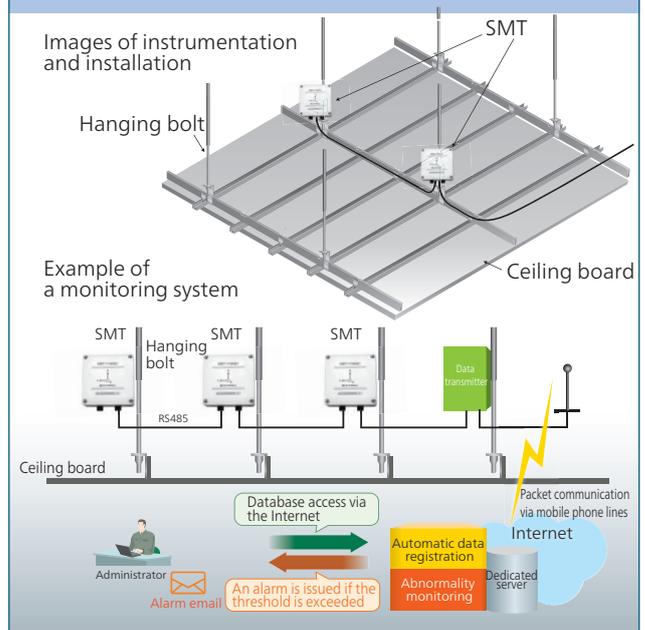


Attention!

Network Terminal Box NTB-100/200 Series

- Can be distributed in multiple locations, perform digital transmission, and have high noise resistance.
- Most suitable for on-site measurement in a rough environment.

Monitoring the state of ceiling boards



● Natural Frequency Meter



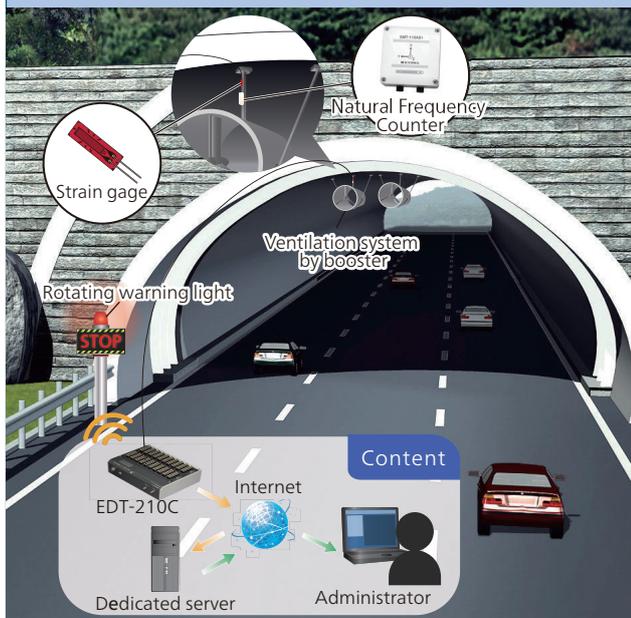
SMT-110AS

Attention!

SMT-110AS Series

- Small and lightweight
- Inexpensive
- Enables long-term monitoring.
- Real-time measurement of natural frequencies

Damage detection of tunnel facility



Attention!

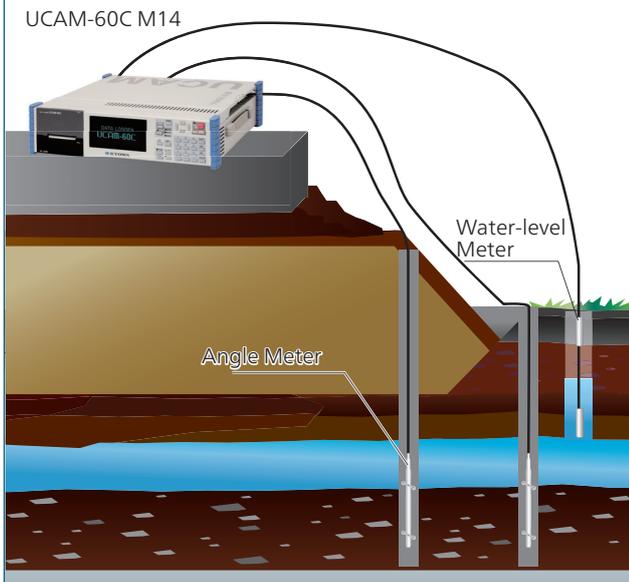
Monitors the deformation of jet fans and notifies dangers to passers-by and administrators in advance.

- Natural Frequency Meter SMT-110AS
- Strain Gage
- Web Data Logger EDT-210C



Banks

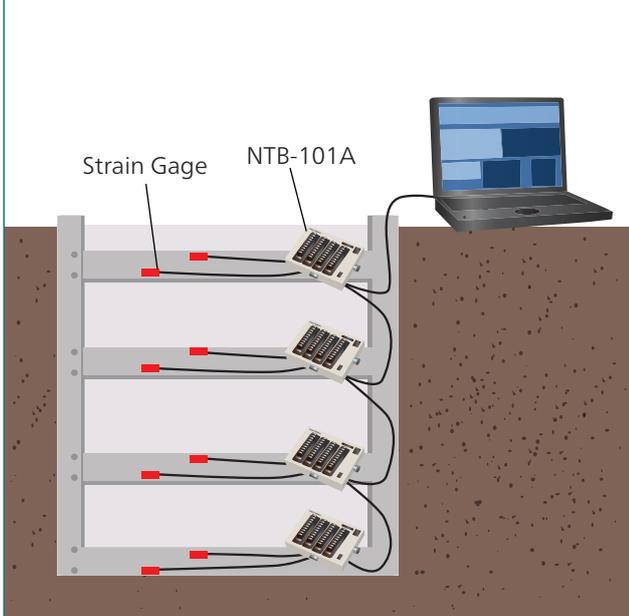
Dynamic observation of earth filling



Attention! Data Logger UCAM-60C M14
Enables automatic multipoint interval measurement on a long-term basis, appropriate for the management of earth filling slopes and groundwater levels.

Urban development

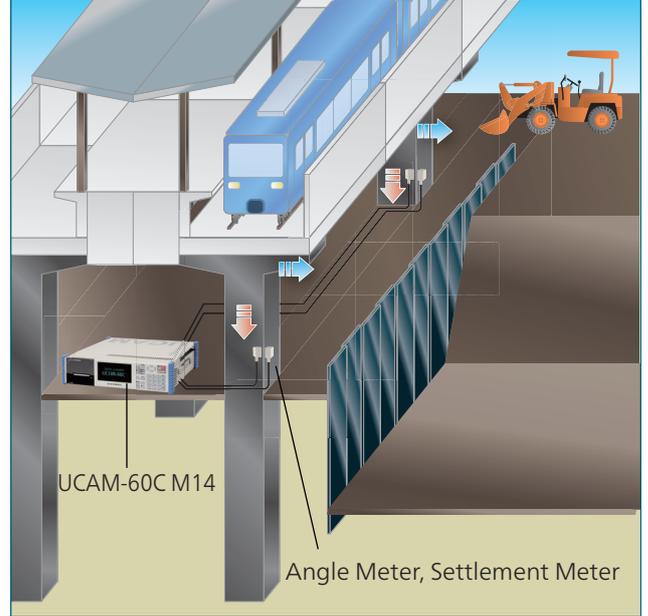
Axial tension measurement of short struts



Attention!

**Network Terminal Box
NTB-100/200 Series**
Can be distributed in multiple locations and used for the stress measurement of large structures.

Deformation measurement in neighboring construction

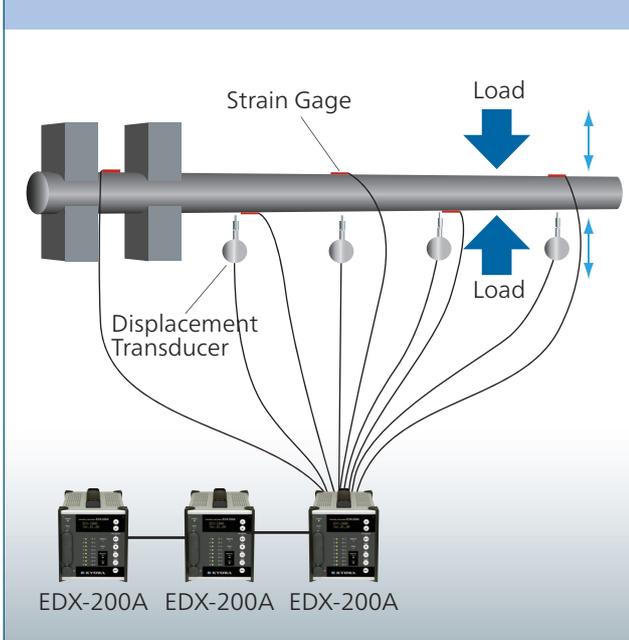


Attention!

**Data Logger
UCAM-60C M14**
Enables deformation measurement in line with the progress of neighboring construction for existing important structures to ensure safety control during the construction period.

Factories

Load test for utility poles



● Universal Recorder



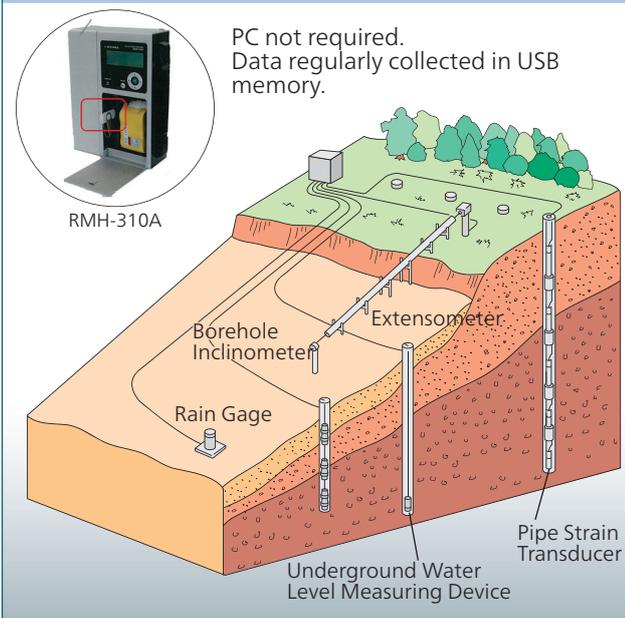
EDX-200A-2H

Attention!

EDX-200A
A maximum of 8 units can be synchronized using one wire. Therefore, this enables the load test for concrete products such as utility poles at multiple points.

Landslides

Observation of landslides



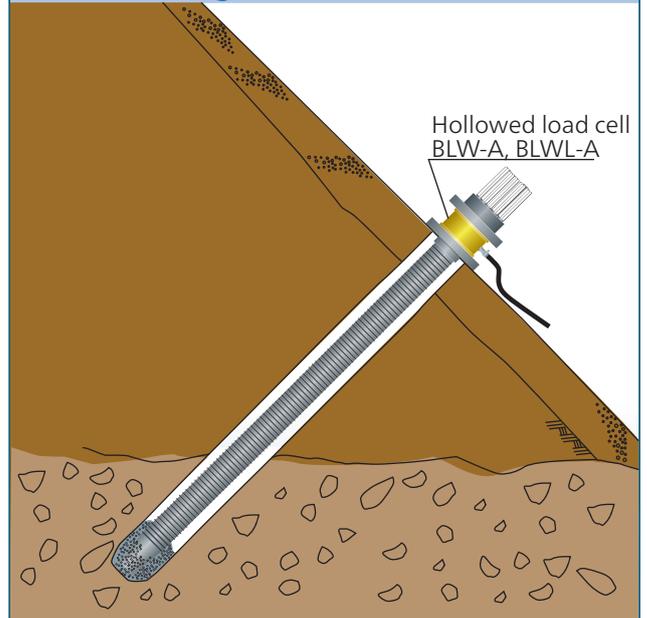
● Digital Strain Recorder



RMH-310A

Enables long-term unmanned data recording even at sites that do not have an AC power supply.

Tension measurement of anchors to the earth retaining wall



● Hollowed Load Cell BLW-A, BLWL-A



● Digital Strain Recorder RMH-310A

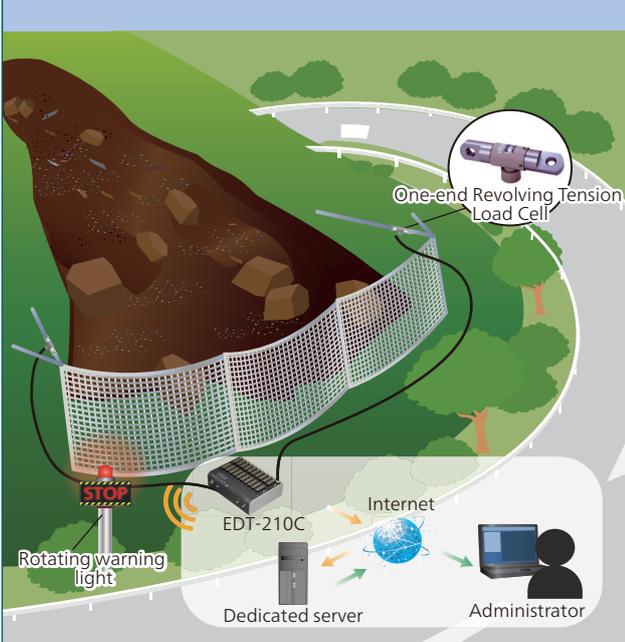


● Network Terminal Box NTB-100/200 series



- Measurement loads on VSL anchors possible
- Helpful for tension measurement of anchors to the earth retaining wall
- Waterproof
- Thin profile
- Lightweight
- Eccentric load, inner or outer load causes less sensitivity deviation.

Rockfall detection of slope



● One-end Revolving Tension Load Cell LTR-S-SA1



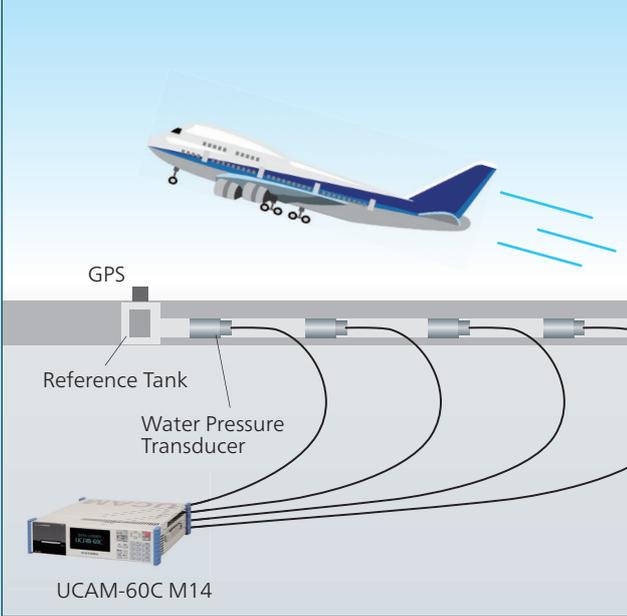
Monitors the rockfall and notifies dangers to passers-by and road administrators.

● Web Data Logger EDT-210C



Airports

Subsidence measurement of airport runways



● Water Pressure Transducer



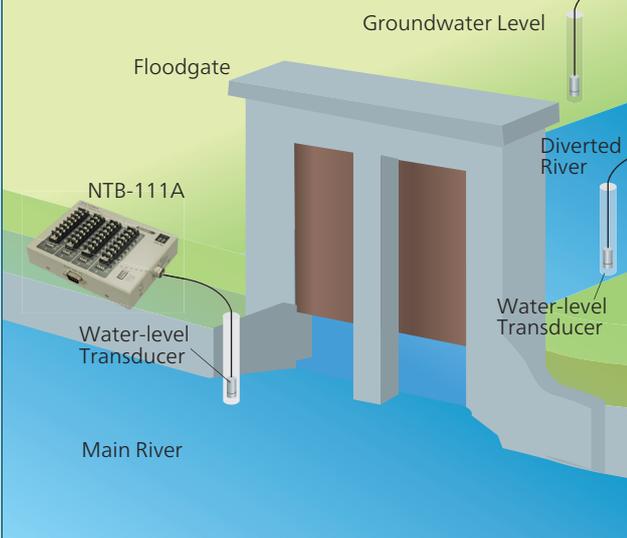
BPB-A-200KP

Attention! Water Pressure Transducer
Enables long-term monitoring of subsidence estimated to be about 7 to 8 m. This is possible when combined with a GPS and reference tank.

Floodgates

Observation of water levels in rivers

This allows you to use the gages installed around the floodgates to monitor water levels.



● Network Terminal Box



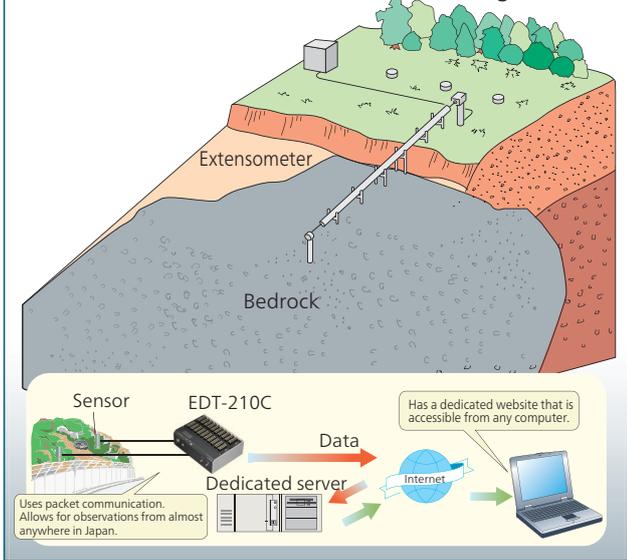
NTB-111A

Attention! NTB-111A
· Compact, lightweight, and affordable
· Allows you to acquire data from the water-level gages that are installed at various locations around each floodgate.

Bedrock

Observation of bedrock displacement

This is used to measure the displacement of bedrock. It is installed at locations where landslides might occur.



Web Data Logger



EDT-210C

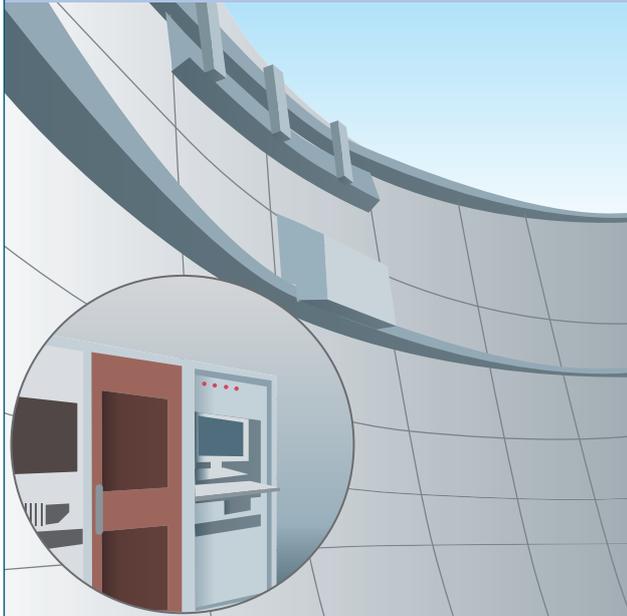
Attention!

EDT-210C

- Allows you to access the data from its dedicated website.
- Enables the manager to continuously monitor the situation.
- Produces trigger signals if something unusual occurs.

Dams

Equipment for observing the behavior of dam bodies

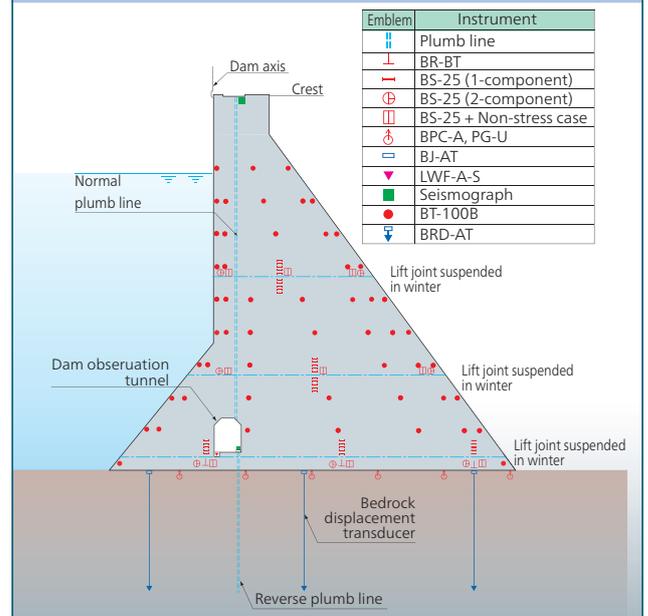


Attention!

Suitable for a variety of dam management options

One system that has a seismometer, plumb line, and other instruments for measuring uplift pressure, leakage, displacement, strains, and more.

Dam body behavior observation instruments (concrete dam)



• Temperature Transducer
BT-100B



• Pore Pressure Transducer
BPC-A



• Stress Transducer
BR-BT



• Strain Transducer
BS-25AT/25BT



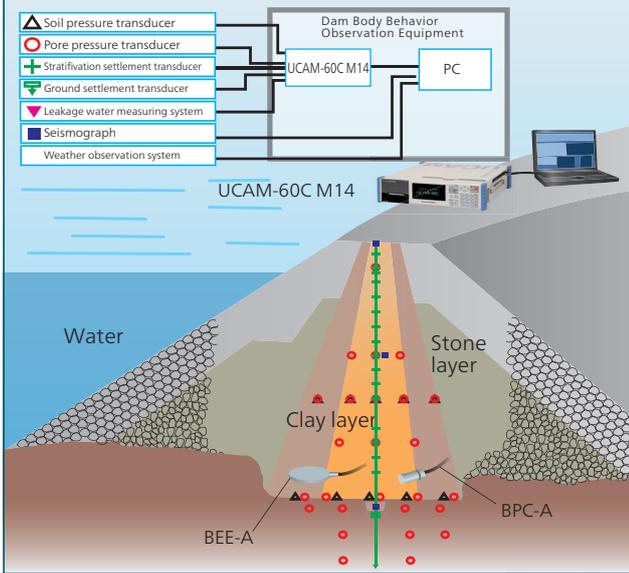
• Leakage Water Measuring System
LWF-A-S



• Bedrock Displacement Transducer
BRD-AT



Observation of rock-fill dam behavior



● Data Logger
UCAM-60C M14



● Pore Pressure Transducer
BPC-A

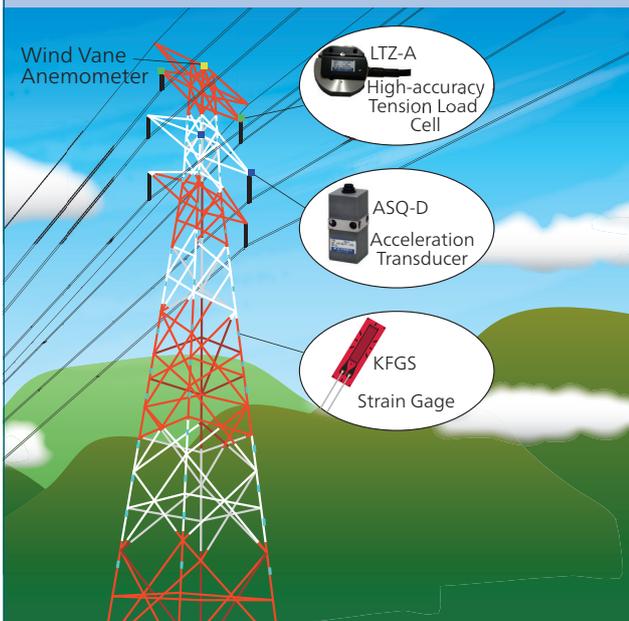


● Soil Pressure Transducer
BEE-A



Towers

Monitoring of towers



● High-accuracy Tension Load Cell



LTZ-A

● Servo Type Acceleration Transducer



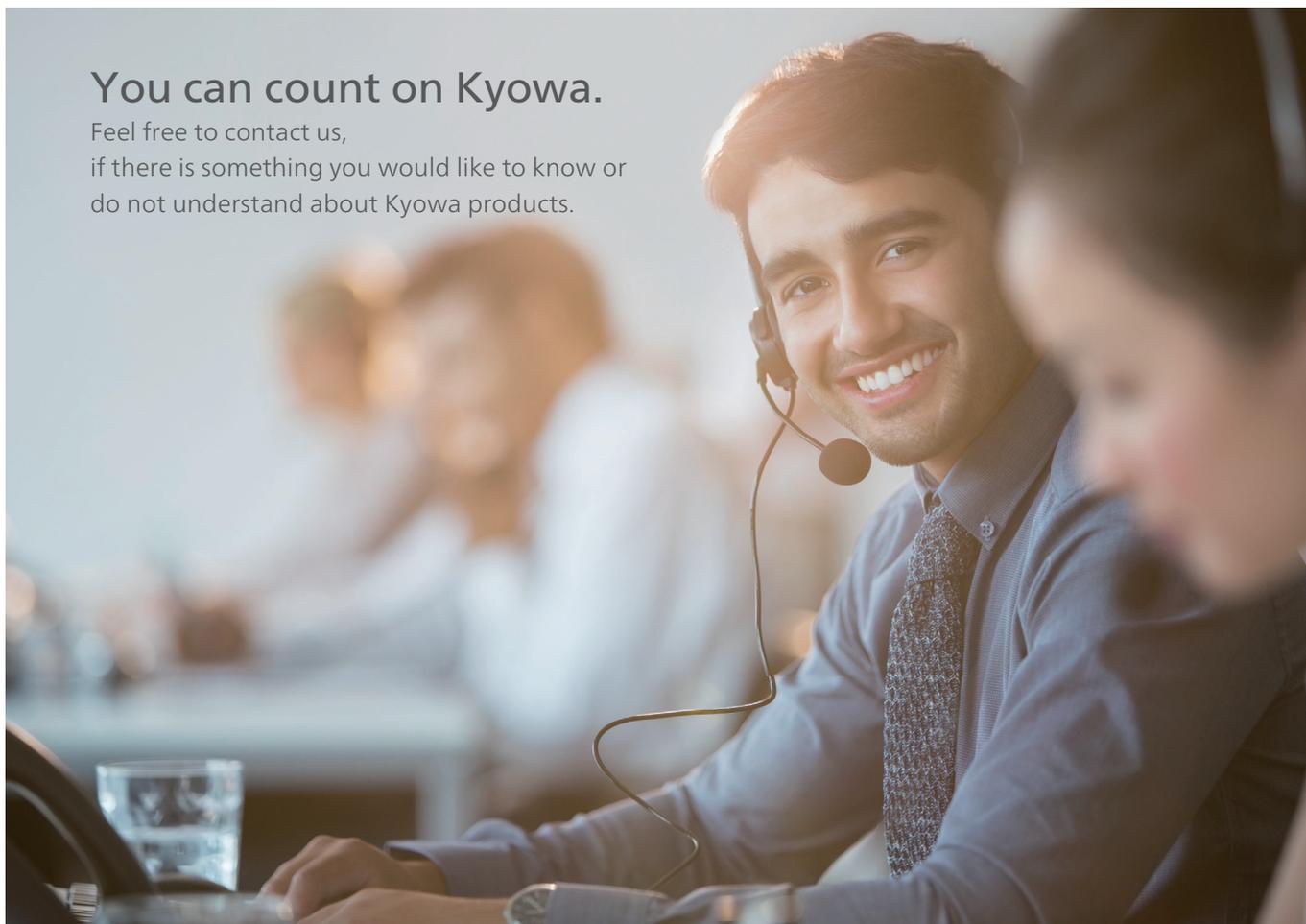
ASQ-D

Attention!

Dynamic observation of steel towers
(Tension, acceleration, strain)
Monitor safety during earthquakes or strong winds.

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



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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.
- Unauthorized use or reproduction of contents of this catalog are prohibited.

Cat. No. E_2019-03



JQA-0821
JQA-EM4824

Manufacturer's Representative