

TML STRAINMETERS

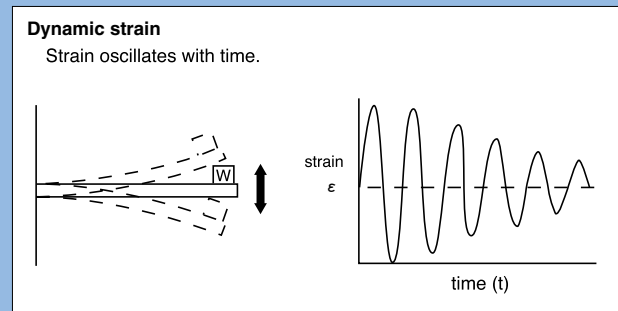
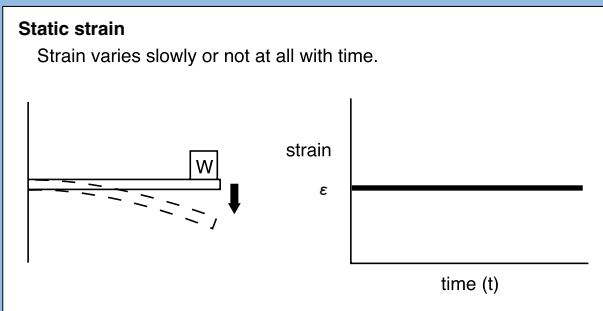
As the resistance change of strain gauges is extremely small, it is indicated or recorded by means of an amplifier, except for special cases and semiconductor gauges. The strainmeter is designed to convert the small resistance change of the strain gauge into a voltage output, amplifying it to output either

digital or analog data. TML provides various types of strainmeters for static and dynamic strain measurements. Histogram recording system is also specially designed for analyzing the frequency distribution of various phenomena that accompany strain gauge measurement.

STATIC AND DYNAMIC STRAIN

The strain characteristics in strain measurement are classified into static, dynamic or a combined behavior according to the rapidity of the phenomena. Static strain varies slowly or not at all with time, while dynamic strain oscillates with time. As strainmeter are

designed specifically for such strain performance, it is important to determine the appropriate strain type in order to select the correct strainmeter.

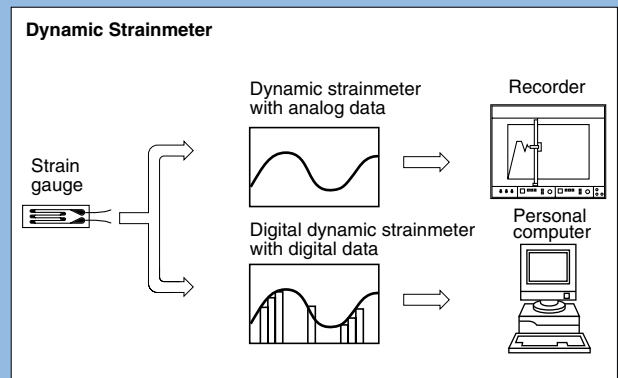
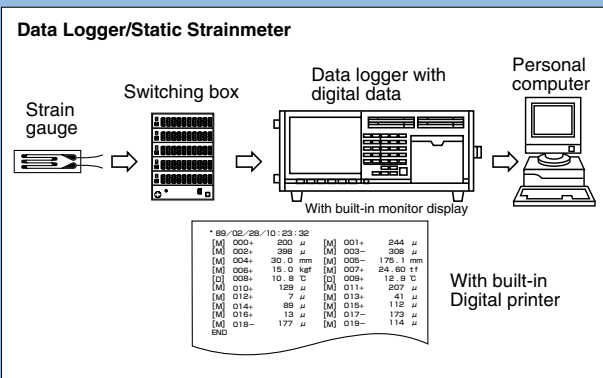


STATIC STRAINMETER

Static strain remains almost constant during measurement, and the strain can be converted to digital values. Furthermore, for multi-point measurement, one unit of instrument makes automatic switching possible. The TML Data Logger is a typical static strainmeter and can measure a maximum of 1,000 points at high speed by cascading automatic switching boxes. It also features a number of processing functions. The TML digital indicator and instrumentation signal conditioner are in same field of instruments or strain gauge type transducers.

DYNAMIC STRAINMETER

Dynamic strain varies with time and their data are converted to analog output signals. The measured strain is amplified by the dynamic strainmeter and output to an external recorder. One strainmeter is required for each measurement point. Using a processing unit such as an A/D converter, digital data can be output and saved in memory, then transferred to computer. The TML digital dynamic strainmeter is compatible with this architecture. The histogram recorder system is specially designed to measure a frequency distribution of dynamic strains.



TMR-200 MULTI-RECORDER



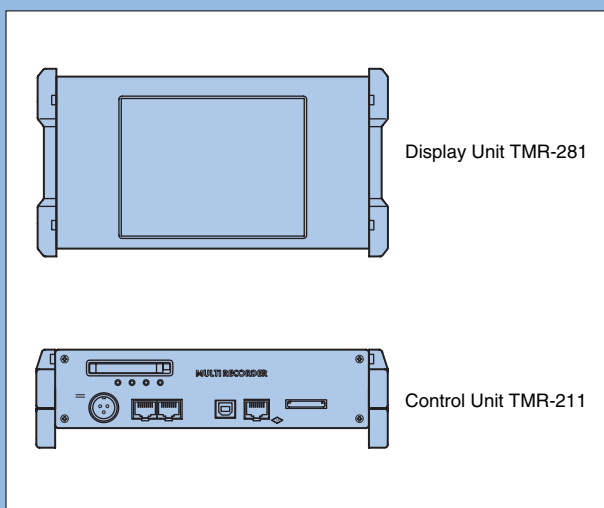
The multi-recorder TMR-200 series is a small multi-channel data acquisition system enabling combination of various measuring units according to experimental purposes. The testing objects are analog input such as stress, load, pressure, acceleration, etc. using strain gauges and strain gauge based transducers and digital input/output such as CAN, etc. on vehicle onboard measurement.

PRODUCT CONCEPT

Conventional dynamic measuring instruments are specialized for strain, voltage and/or temperature measurements. If a system is set up in combination with strain and temperature or voltage and temperature, locations and wiring becomes troublesome, and settings for input and synchronous signal and output to an external device require a skilled work. As the TMR-200 can voluntarily combine various input units for strain, temperature and so on, complicate system can be simplified. For example, strain and temperature measurements in a material testing get possible by merely connecting the strain full bridge unit and voltage/thermocouple unit to the control unit. The number of measuring channels can be extended up to 80 by adding the necessary units.

EXPANDABILITY OF APPLICATION

Due to smallness and lightweight, the TMR-200 can be easily installed onto not only fixed structures such as machines and bridges but a moving body such as automobiles, aircrafts and shipping. In a vehicle measurement, there are so many and versatile testing themes as to comfortableness and safety with the development of computer-controlled products, and the related various sensors have being developed day by day. In compatibility with such versatile sensors, expanded units such as CAN/VOICE/GPS unit and telemeter unit are added to ordinary strain, voltage and temperature measuring units. Moreover, installation of an histogram analysis library (option) into the control unit TMR-211 makes real-time histogram analysis possible.



Measuring Units

Voluntary combination of various inputs according to purposes

	Strain full bridge unit TMR-221
	Strain 1G2G4G unit TMR-222
	Voltage/thermocouples unit TMR-231
	Voltage output unit TMR-241
	CAN/VOICE/GPS unit TMR-251
	Telemeter I/F unit TMR-252