

Characteristic Chart of VW Sensor & FSG Sensor

Sensor element	VW Sensors	FSG (Foil strain gage type) Sensors
Output	Frequency signal (Hz, μ sec)	DC Voltage
Accuracy	Very accurate	Accurate
	Applied gage factor : 0.5 ~ 1.0 % FSR Applied ABC factor : 0.1 ~ 0.5 % FSR	Applied gage factor : 0.2 % ~ 2.0 % FSR
Measuring environments	Optimum in static measurement, VW sensors are incompetent in dynamic measurement.	Optimum in static measurement, Electrical resistance sensors are rather competent in dynamic measurement
Be measured or not with VW readout units manufactured by other company	VW sensors may be measured with any VW readout units, but sometimes they may be not measured according to performance of them	Electrical resistance sensors may be not measured according to input and output voltage, makers.
Thermal zero shift	They are affected by coefficient of linear expansion of materials. Thus they need to measure frequency and temperature signal and to compensate temperature variations	Electrical resistance sensors that foil strain gages are bonded to the body, compensate automatically for temperature variations. On the contrary, electrical resistance sensors that are equipped with potentiometers or electrolytic level sensors, need to compensate for temperature variations.
Transmittable length	Usually 2 to 3 kilometers	Usually 200 to 300 meters
	The frequency signal means alternating current. Thus VW sensors are affected by cable resistance and length. They can be transmitted to maximum 4 kilometers in shielded cable	The output from the electrical resistance sensors is direct current. Voltage drop in cable increases as its length become long
Effect of noise and electromagnetic waves	Little influence	Great influence
	When sources of vibration or impact supplied on the transducer that the vibrating wire is fixed on one point, the instrument is affected by them. In installation of those instrument. It needs to protect the transducer from damage.	DC output from electrical resistance sensors is feeble, so its magnitude may be altered by noise or electromagnetic waves. To prevent these troubles, signal cables must be shielded on ground and be far away from power cables and sources of electromagnetic waves. In addition, signal cables must be installed perpendicular with power cables, if that installation is inevitable. If troubles are not eliminated by means of previous descriptions, the outer surface of signal cables must be covered with tapes made by copper and then it must be grounded
Effect of vibrations and impacts	Comparatively little	Very little
Permanent monitoring	Semi-permanent	A little restriction
	VW sensors that are assembled with a music wire of high elasticity of modulus are affected by secular change and fatigue, but effect of creep is within error. Thus they can be monitored semi-permanently. Permanent monitoring depends on design, manufacturing skill and productive facilities for VW sensors.	Foil strain gages bonded to the body with an adhesive agent may come off. Permanent monitoring depends on design, skill bonding gages and field environments for electrical resistance sensors.

(Note) This table is just the general character to help choosing a measurement device owing for a condition of a site and output device that we have, So it can't be an absolute yardstick.