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a strain gauge also spelled strain gage is a device used to measure strain on an object invented by edward e simmons and arthur c ruge in 1938 the most common type of strain gauge consists of an insulating flexible backing which supports a metallic foil pattern a strain gauge is a sensor whose resistance varies with applied force it converts force pressure tension weight etc into a change in electrical resistance which can then be measured when external forces are applied to a stationary object stress a strain gage works to measure the amount of strain on a given object at its most basic form a strain gage converts a change in dimension to a change in electrical resistance the ratio of mechanical strain to electrical resistance is what is known as the gage factor and is specific to the type lot of strain gage used feb 24 2012 strain gauge definition a strain gauge is a device that measures the deformation strain of an object when force is applied through changes in electrical resistance working principle the strain gauge detects minute geometrical changes as resistance changes which indicate the level of stress on the material by gabriel hollings strain gauges are devices that are commonly used by engineers to measure the effect of external forces on an object they measure strain directly which can be used to indirectly determine stress torque pressure deflection and a strain gauge with a gf of 2 exhibits a change in electrical resistance of only 2.500×10^{-6} for a 120 Ω gage this is a change of only 0.12 Ω to measure such small changes in resistance strain gauge configurations are based on the concept of a wheatstone bridge a strain gauge sometimes referred to as a strain gage is a sensor whose resistance varies with applied force it converts force pressure tension weight etc into a change in electrical resistance which can then be measured 1 per page buy strain gauge element14 singapore offers special pricing same day dispatch fast delivery wide inventory datasheets technical support a strain gauge is designed to measure the strain amount by using the principle that the resistance changes with the expansion contraction of the strain gauge then how does the gauge detect that change in the resistance here let's dig a feb 14 2023 strain gauges range from the immensely simple to the fiendishly complex but all of them are superbly useful to scientists and engineers let's take a closer look at how they work photo this spring dynamometer measures force using strain the more force you apply the more the spring stretches

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