

Perancangan Alat Ukur Torsi *Portable* Kendaraan Roda Dua Berbasis Mikrokontroler (*Desig of a Microcontroller-Based Portable Torque Measuring Instrument for Two-Wheeled Vehicles*). Pembimbing (Mochamad Irwan Nari S.T., MT.)

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ABSTRACT

Advances in technology and science are currently developing very rapidly and it is proven that many of the latest innovations that have been created in modern times technology are made in order to make it easier for users, one example of technology that is sufficient to provide an convenience for users to find out the performance (torque) of vehicle engines motorized which utilizes a sensor based on a microcontroller. This research was conducted with the aim of designing a microcontroller-based torque measuring instrument using an encoder to determine the RPM value and the load cell to measure the strength of the torsional load from the rotational pressure of the roller through the wheels of a motorcycle. This type of research uses experimental research. The object of this research is the engine performance (torque) which is read using the encoder and load cell sensors. The results of the research obtained by the researcher are able to produce a microcontroller-based measuring instrument design for motorbikes that can bring up engine performance readings (torque) with the ability to read at 3962-4000 rpm of 12.31 Nm while the existing dynotest is 11.86 Nm and torque at engine rpm 4250 - 4362 are 14.6 Nm while the existing dynotest is 11.89 Nm. However, when the vehicle enters rpm above 4250-4362 the torque reading is less accurate and unstable.

Keywords :Encoder Optic, Load Cell, Torque