

# SISTEM KESELAMATAN SEPEDA MOTOR UNTUK MENGHINDARI KECELAKAAN BERBASIS MIKROKONTROLER

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## Abstrak

Kecelakaan lalu lintas adalah kejadian dimana sebuah kendaraan bermotor bertabrakan dengan benda lain yang menyebabkan kerusakan dan kerugian materil. Tujuan dari penelitian ini merancang sistem pengereman secara otomatis yang mampu memberi peringatan dengan alarm dan memberhentikan laju kendaraan sehingga laju kendaraan akan terhenti sebelum terjadi tabrakan. Pada perancangannya sensor *MB1010 LV-MaxSonar-EZ1 Sonar Range Finder* akan mendeteksi adanya benda atau penghalang yang berada di depan, maka sistem akan memberi peringatan suara *buzzer* dan menyalakan lampu LED. Sensor mendeteksi jarak 645,16 cm, LED hijau aktif/menyala sedangkan LED kuning dan merah tidak aktif begitu juga dengan *buzzer*. Sensor mendeteksi jarak 96,62 cm, LED hijau dan LED kuning tidak aktif. Sedangkan LED merah dan *buzzer* aktif yang menandakan jarak tidak aman sekaligus *relay* aktif dan mematikan laju sepeda motor. Sensor mendeteksi jarak 144,74 cm, keadaan LED hijau dan LED kuning tidak aktif. Sedangkan LED merah dan *buzzer* aktif yang menandakan jarak tidak aman sekaligus *relay* aktif dan mematikan laju sepeda motor.

**Kata kunci** : Sensor *MB1010 LV-MaxSonar-EZ1 Sonar Range Finder*, *buzzer*, *relay*, mikrokontroler.

# ***MOTORCYCLE SAFETY SYSTEM TO AVOID MICROCONTROLLER-BASED ACCIDENTS***

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## ***Abstract***

*A traffic accident is an incident where a motorized vehicle collides with another object that causes material damage and loss. The purpose of this research is to design an automatic braking system that is able to give a warning with an alarm and stop the vehicle's speed so that the vehicle's speed will be stopped before a collision occurs. In its design the MB1010 LV-MaxSonar-EZ1 Sonar Range Finder sensor will detect objects or obstructions in front, the system will alert buzzer sound and turn on the LED lights. The sensor detects a distance of 645.16 cm, the green LED is active / lit while the yellow and red LEDs are inactive as well as the buzzer. The sensor detects a distance of 96.62 cm, green LEDs and yellow LED are inactive. While the red LED and buzzer are active which indicate the distance is not safe as well as an active relay and turn off the speed of the motorcycle. The sensor detects a distance of 144.74 cm, the state of the green LED and the yellow LED is off. While the red LED and buzzer are active which indicate the distance is not safe as well as an active relay and turn off the speed of the motorcycle.*

***Keywords*** : MB1010 LV-MaxSonar-EZ1 Sonar Range Finder sensor, buzzer, relay, microcontroller.