

INDUCTION VEHICLE DETECTION AND IDENTIFICATION SYSTEM, INDUCTION LICENSE PLATE, AND INDUCTION READER

ABSTRACT

The present invention relates to traffic control devices designed to register vehicles and monitor traffic using vehicle identification.

The objective of the invention is to simplify the system in order to make it single-band, to use a magnetic frame placed under the roadway instead of antenna fixtures over the road or at the roadside, as well as to provide safe and reliable functioning of the system while detecting and identifying fast-moving vehicles with HF-band ultra-long-range induction systems.

The induction vehicle detection and identification system comprises electronic identification means with electronic memory, mounted on vehicles, and a reader capable of reading and/or writing data obtained from HF-band electronic identification means, wherein electronic vehicle identification means are integrated into the vehicle's license plate and the electronic memory unit is non-volatile; and wherein the reader is equipped with a magnetic frame, which is put into a dielectric casing installed approximately 1m beneath the roadway, wherein the said frame generates alternating magnetic field making up its detection and identification coverage, which is as wide as the lane, up to 2m long, and reaches at least 1m above, when signals reaching the frame are excited with power of up to 1W; and wherein the minimum time the reader requires to read discrete responses generated by electronic identification means and to identify a vehicle does not exceed 25 ms and conforms to the vehicle speed of up to 250 km/h; and wherein electronic identification means and the reader are capable of exchanging data with each other at the rate of at least 1Kbit/sec; and wherein electronic identification means and the reader are capable of encoding and decoding data, as well as restricting data access.