SPECIFICATIONS
FOR
RAISED PAVEMENT MARKER DETECTOR
MODEL R10

May 13, 1993, Revised November 10, 1998

0.0 SCOPE

0.1 This document lists the requirements for an electromagnetic raised pavement marker detector (RPM detector) capable of sensing and skipping cast iron reflectors.

1.0 FUNCTIONAL DESCRIPTION

1.1 The RPM Detector is intended to detect the presence of a the cast iron reflector platform, locate the position of the reflector accurately, and interrupt the current to the paint solenoids at the precise time the reflector is passing beneath the paint guns. It shall be usable with any skip timer system.

1.2 The RPM Detector shall use a low frequency induction balance system to detect the presence of iron. It shall be insensitive to aluminum foil, temporary marking tape even when aluminized, and surveyor's spikes. It shall have a shallow depth of sensitivity to minimize erroneous detection of steel reinforcing bars and mesh embedded in the pavement.

1.3 The RPM Detector shall have an adjustable time delay to adjust for vehicle speed and for the distance from the detection point to the paint application point. An additional timer will provide the paint-off gap.

1.4 The RPM Detector shall operate in ambient temperatures of from 32° F to 131° F without recalibration.

1.5 Operator adjustments of detection thresholds shall be non-critical and stable.

1.6 The RPM detector shall operate on 12VDC negative ground (11-15V DC), with 2 Amp draw.

1.7 Outputs shall be four high-side drivers of 2 Amps each with enabling signals from the skipline control, capable of controlling four independent paint solenoids simultaneously.

2.0 MECHANICAL SPECIFICATIONS

2.1 The RPM Detector shall be comprised of two units, a control unit and a sensing head. The sensing head shall mount preferably on the gun carriage in front of the paint guns, and the control unit within reach of the painting system operator. The two units shall be connected by a cable with a connector at each end. The control panel shall contain the series control transistors for the guns, and connection to the gun circuits shall be via a terminal block in the control unit.

2.2 The control panel shall contain controls for vehicle speed compensation, paint off (skip) time, and sensor/paint pattern distance delay. There shall also be a bypass switch, allowing the operator to disable the skip function. The control unit will contain all of the system electronics.

2.3 The control panel shall be constructed in a raintight NEMA 12 enclosure.

2.3 The sensor head shall be very ruggedly constructed and shall be sealed with a conformal plastic coating that is resistant to common solvents, dust, glass beads and weather.