EXCEL TECHNOLOGY Group

An innovator in the development of intelligent vehicle highway solutions.

Special Purpose Ultrasonic & Passive Infra-Red Detectors

The ETG Ultrasonic vehicle detector was developed for a special purpose application in bus stations where loops could not be installed and RADAR reflected interference caused a high rate of error. Additionally the budgeted project cost did not allow for video image based detection and a reliable low cost solution was required.

The Ultrasonic detector was 'calibrated' to the distance from the bus station ceiling to the roadway. Most units were directed perpendicular to the roadway however a few sites required a side fire application. When a vehicle entered the detection zone the calibrated distance varied and an actuation was recorded. Adjustments for sensitivity and actuation qualification were included. The user could adjust the number of consistent variant measurements with a degree of variation. This overcame false triggering and improved equipment performance.

The INFA-RED pedestrian detector was developed to overcome complaints from domestic residents living in close proximity to pedestrian crossings that incorporated the audio tactile facility for visually impaired persons. The IR Pedestrian detector controlled the audio tactile feature by directly controlling its operation during low light periods ie., night time. The IR Pedestrian detector turned off the audio tactile sound at traffic signal pedestals until a person approached the pedestrian pushbutton. When a person was detected within this typically 3 metre zone the audio tactile sound was switched on to allow a visually impaired person to find the push button. If the pedestrian push button was pushed three times without infrared detection then the facility reverted to audio tactile ON – thus providing a safety fallback operation.

Feature Attributes:

- Non-intrusive detection of vehicles and people
- Both solutions are low cost and easy to install
- Ultrasonic detection for vehicles
- Passive Infrared for people (Pedestrians)
- User configurable operational fallback parameters
- Microprocessor control all functions
- Ultrasonic detector incorporates a user friendly LCD display of configuration parameters and Op. status
- Pedestrian detector has clear simple LEDs to indicate operation
- Suitable for bikeways, pedestrian detection and tunnel applications

Designed and manufactured by Excel Technology Group Pty Ltd
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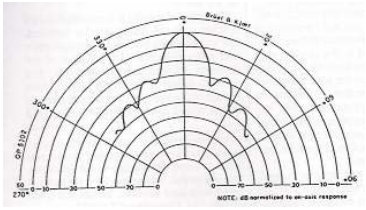
Ultrasonic Vehicle Detector

- Presence detection – stationary vehicle 100% Error free
- Passage detection – 3mt vehicle travelling at 40km/hr 0.1% Error
- Detection zone 2Mts to 10Mts
- Minimum transmitting sensitivity at 50Khz -110db
- Minimum receiving sensitivity at 50Khz - -42db
- Single 9-12VDC supply
- Capacitance at 1Khz 400-500pF
- Operational conditions
  - Temperature 0°C to 65°C
  - Relative Humidity 5% - 95%



PIR Pedestrian Detector

- Detection zone 2Mts to 5Mts
  - Temperature 0°C to 65°C
  - Relative Humidity 5% - 95%
- Voltage 12VDC - <50Milliamps
- RFI Immunity 30v/M @ 10Mhz
- Quality multi-facet LENS
- Narrow spectral response

General Specification

Environmental Specification:

- Circuitry is rated to 65°C operation with a relative humidity of 90%. Circuit cards are conformal coated and will operate within Australian Standard Guidelines for Traffic Control Devices as per TSC/3 and TSC/4. The CONFORMAL coating material used to protect the circuit cards is labelled SCC3 CC from Electrolube. The conformal coating material has a dielectric strength of 90KV/mm and an operational temperature range of –70°C to +200°C and is self extinguishing when exposed to a flame.

Connector Specification:

- Easy to connect via PCB Modular Terminal 'Phoenix style' connectors, 10Amp Rated Voltage 300VAC

Digital I/O:

- Output Devices: PVAZ172 MOSFET Photovoltaic Relay 60volt 500 milliamp S/capability
- Relay control – Contacts 6A/250VAC rating with Max Volts 400V
- Inputs are optically isolated by PC844 Opto-isolator 5000V rms Isolation devices, Input 20milliamps @ 1.2volts
- The operation of the circuit is provided by Microprocessor operation PIC 17C756 & 16C54

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