

## Intelligent Motorway Detection Systems

### IR100



#### FEATURES

**Multi - Lane Data** - The IR100 can monitor 24 loops (or 12 lanes in speed measurement mode) at vehicle speeds to 200km/h.

**Time tagged or Average Data** - The IR100 will accurately time -stamp (100µS resolution) individual loop data or provide average flow data relating to traffic volume, speed, headway and % occupancy

**Internal Communications bus** - The processor card communicates serially with the detector cards to facilitate remote detector card configuration and diagnostics

**External Serial Port** - RS232 (point - point) and RS485 multi-drop communications options available at Baud rates from 2400 to 38,400.

**Built in battery charger** - The equipment power supply has an integral charger for a 12V standby battery and auxiliary 12V supply for communications modems.

**Reliable / low maintenance** - The IR100 equipment has an enviable field record for long service / low maintenance.

**Equipment approvals** - The IR100 equipment fully complies with European and Australian standards for EMC, Electrical safety and environmental immunity.

The Nortech Intelligent Vehicle Loop Detector Unit has been designed to gather traffic data captured from inductive loop sensors buried in the motorway.

The IR100 is designed to collect multi -lane data and can monitor 24 loops (or 12 lanes in speed measurement mode) at vehicle speeds to 200km/h. Traffic data comprises of individual loop data accurately time-stamped to 100µS resolution, individual vehicle data or average flow data relating to traffic volume, speed, length category, vehicle headway and percentage occupancy.

Remote configuration of all operating parameters provides complete flexibility to operate with variable loop configurations, and provide various traffic data types.

The IVLD unit is housed in a full or half 19", 3U High Eurocard Rack. The equipment rack includes a compact universal power supply delivering all the power requirements to the rack and a charger output to maintain a standby battery.

#### APPLICATIONS

- Motorway Incident Detection Systems  
Time tagged "raw" loop data  
SVO data for reports and logging.
- Permanent Traffic Data Collection sites  
Individual vehicle reporting  
Average data on volume, speed, headway and Occupancy%
- Travel - time and real time traffic flow data  
Real time traffic data for traffic advisory and route selection systems

SPECIFICATION

IR100

**TD624ES Detector**

Tuning Range: 20-1000µH

Sensitivity: Four step adjustable on faceplate.  
Max = 0.02% , Min = 0.24% ΔL/L

Presence Time: Four step adjustable on faceplate  
3.5 seconds, 4 minutes, 40 mins  
indefinite (limited by ΔL/L).

Response Times: Turn on = 40ms +/-2.4ms  
Turn off = 45ms +/-2.4ms  
Recovery +/-80ms

Detect Outputs: Solid state opto-isolated open  
collector. ("On" = detect)

Fault Outputs: Open collector per channel  
operates under Loop short / open  
circuit conditions.

Indications: 2 LED per channel, 1 Red – Detect,  
1 Red - Fault

Loop Protection: Isolation transformers, zener diode  
clamping on loop inputs and gas  
discharge tube protection

Power Requirements: 9V DC - 40V DC,  
1.8VA (max) @ 24 V DC

Serial Coms: TTL level Tx and Rx @ 9600 bps.

Operating Temperature: -40°C to +80°C  
(Circuit conformally coated)

**Mechanical Details:**

Dimensions: Eurocard, 160mm x 100mm

Face-plate: 25mm (wide)

Material: Polypropylene - injection moulded



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TRAFFIC**

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**SC600E - Communications / Processor**

Front Panel indications: Red LED : "Event"  
Red LED : "Active" (flashing)  
Fault Status 2 x LED Serial  
Internal Interface - 2 x LED Tx / Rx  
External Interface - 2 x LED Tx /Rx

Detector Address: Faceplate mounted DIPswitch  
Address 0 - F

Data rate switch: Faceplate mounted DIPswitch  
data rates from 9600 - 38400 bps

Comms mode: The RS232 or RS485 mode is set  
on a PCB mounted DIPswitch

Reset: depressing the reset switch on the  
front panel resets the SC600E

Internal Serial Data rate - 9600 Interface:  
Data bits - 8  
Start bits - 1  
Stop bits - 1  
Parity - None

Power Requirements: 9V DC - 40V DC  
3.6VA (max.) @t 24V DC

**PS224B Power Supply**

Supply Requirements: 240V AC ± 10%

Power Outputs: +24V DC @ 800 mA ± 0.5V  
+12 V DC @ 400 mA ± 0.8V  
+13.8V DC @ 600 mA (Battery  
charging)

Operating Temperature: -20°C to +50°C

Monitor limits: Charger Fail alarm  
Low battery alarm  
Low battery disconnect

Front panel Indications: Mains power available  
Equipment power on  
Charger power available

Mains fuse: 1 Amp slo-blow