

MIDAS - Motorway Incident Detection and Automatic Signalling

Siemens MIDAS Equipment

The Siemens MIDAS outstation and transponder equipment allows automatic setting of signals in response to the detection of incidents, queues or slow-moving traffic on the road ahead. This ensures the best protection of the end of any queue from traffic travelling too fast to avoid a dangerous situation.

- MIDAS can sample up to 20 loops.
- It reports averages for speed, occupancy, headway and flow over an interval.
- It provides alarms when there is a change in average speed or flow at a site.
- It provides alarms when there is a high occupancy condition in a lane.

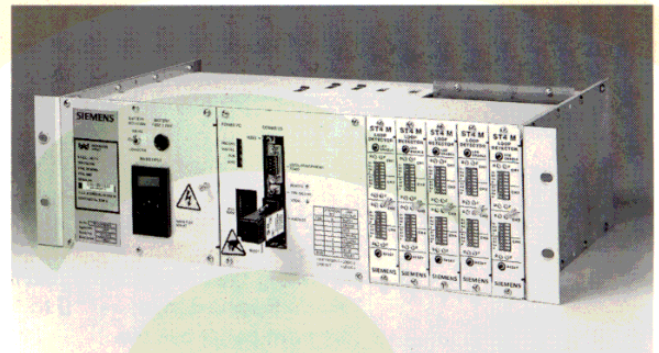
Transponder

A Transponder continuously monitors its Outstations for status and alerts. This information, together with Transponder status and fault reports detailing changes in Outstation operational status or hardware failures (e.g. mains fail) are reported to the NMCS2 Instation. A serial interface allows connection of an Engineer's Terminal, which can give identity, version, status information and monitoring of messages on the Transponder to Outstation links.

Outstation

Each MIDAS Outstation continuously monitors vehicle data on a per lane basis. Speed, headway and length for individual vehicles, plus flow counts, are calculated. Time-averaged statistical data is reported to the Instation via the Transponder. Raw data is used by algorithms which report corresponding MIDAS Alerts to the Instation. A serial interface allows connection of an Engineer's Terminal, for identity, version and status information, individual vehicle data and MIDAS Alerts.

An additional auxiliary link is provided, which operates in an output only mode and transmits individual vehicle data, traffic data and MIDAS Alerts in response to Instation configurable parameters.



Physical Characteristics:

Standard 3U-high, 19" rack mount.

Lightning Protection:

Meets the requirements of CCITT K20.

Safety:

Meets Electrical Safety requirement ENG 0950.
Meets Telecommunications Safety requirement EM 41003.

EMC:

Meets emission and susceptibility requirements of TRG 1068.

Environmental Information:

Meets mechanical and temperature requirements of TR2130.

Operating temperature: -15 °C to +65 °C.
Humidity: 95% (non-condensing).



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Power Requirements: Mains input voltage 85 - 260V AC. Frequency 47 - 440Hz
Rated current 150mA

Processor: 32 bit Embedded Power PC.
4 Synchronous/Asynchronous Isolated RS485 ports.
2 Synchronous/Asynchronous RS232 ports.
1 Asynchronous RS232 port.
JTAG Interface. RealTime Clock.

Battery Backup: Lead acid battery support - 20 hour operation.
SRAM memory support - 1 year.

Data Rates: Standard rates 2400, 4600, 9600.
Other rates programmable up to 38,400.

Modem: CCITT V.26 modem standard. 2/4 wire operation.
BAPT Approval for connection to leased line. UK DOT Specification TR2066
EN 60950 / EN 41003 - Safety Requirements CCITT V.28 - Electrical Interface Specification
Single Eurocard : 100 x 220 x 30 mm

Loop Detectors: Max number of loops: 20.
Meets the requirements of TR0100 and Radio Regulations MPT1337.
The MIDAS Loop Detector is a scanning 4 channel detector with a single Eurocard outline.

Power supply and current: either A: 5V DC at 60mA current
12V DC at 20mA current
or B: 24V DC at 80mA current

Inductance Tuning Range: 50 μ H to 300 μ H (plus feeder inductance)
Feeder Length: 0 - 200 metres
Operating Frequency: 20kHz to 110kHz
Vehicle Speed Range: 0 to 195 km/h

The front panel has the following features:

- Three sensitivity switches per channel.
- One presence time switch per channel.
- Reset button.
- Lamp button.
- Fault and Detect LEDs.

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