SIEMENS

WiMag Cycle Detection

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Siemens WiMag Cycle Detection uses in-ground wireless detectors and microwave radar technology to identify and count bicycles of all types, including those constructed from carbon fibre.

WiMag cycle detectors differentiate between cycles and motorised vehicles and can distinguish objects based on their speed (stationary or in motion). With a configurable detection range of up 90 degrees and 3 metres in width, the system provides accurate cycle detection with bicycles not needing to pass directly over the detector in order to be identified.

Applications

WiMag Cycle Detection can be used to detect the presence of bicycles, provide count information and enable traffic signaling phasing to be tailored based on cycle demand. The detection techniques used are suitable for Stop Line, VA and SCOOT applications.

Easy installation

The installation of the WiMag Cycle Detection System is simple, by 'coring' the appropriate diameter hole in the carriageway and fixing the detector in place with a dedicated epoxy resin, eliminating the need for extensive ducts.

Integration with WiMag detectors

The system can be used in conjunction with the WiMag Vehicle Detection System, sharing the same communications infrastructure and using access points and repeaters to establish two-way wireless links to detectors within the system.

The Siemens access point has a wired ethernet connection (via a RJ45 connector) to transmit the detection data to a roadside traffic controller via an interface card. Multiple access points may be used if necessary to provide connectivity to many WiMag detectors and repeaters are also available to extend the physical range between detectors and access points.

Low power

WiMag detectors have an in-built low-power wireless transmitter/receiver and a dedicated battery to transmit detection data to an associated access point or repeater.

Interface options

As with the WiMag Vehicle Detection System, WiMag Cycle Detection offers a cost effective and flexible means to connect many detectors to a wide variety of controller types.

- For large sites using ST950 controllers, a dedicated WiMag equipment rack is available. This neatly accommodates all controlled-mounted parts of the system to provide support for up to 60 detectors (WiMag Cycles or Vehicle Detection), up to 7 access points and interfaces directly to the controller through its internal serial data bus.

- For smaller sites or controller types, WiMag offers a 4-channel interface card that replicates a standalone loop detector card, providing support for 4 detectors and a single access point. Cards can be linked together to extend the number of detectors and access points that can be supported.

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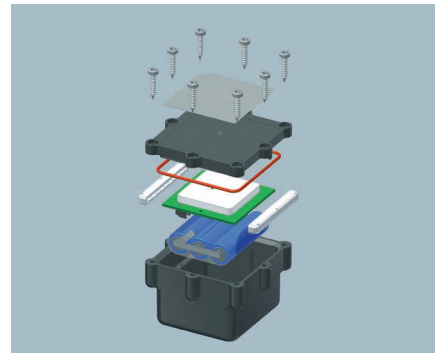
Technical specification

WiMag Cycle Detection

- Detection: microwave radar
- Dimensions: 74mm x 74mm x 58mm
- Power supply: non-replaceable primary Li-SOCl2 3.6V battery pack
- Range: typically up to 30m to Repeater/Access Point
- Operating temperature: -40°C + 85°C
- Weight: 0.3kg
- Frequency band: 2400 to 2483.5 MHz
- Installation core size: Ø100mm x 57mm deep
- Installation compound: two-part silicone polyurea sealant
- Ingress protection rating: IP67

Infrastructure Equipment

WiMag 19" Rack Assembly

- Up to 60 detectors and 7 Access Points
- Typically up to two racks can be fitted in ST950 cabinets

WiMag Loop Detector Replacement Card

- Up to 4 detectors and 1 Access Point
- Cards may be connected together to increase capacity
- Standard 3U single Eurocard
- Dimensions: 160mm x 100mm x 25mm
- Number of channels: 4 optically isolated
- Master Fault: Isolated output (n/c and n/o)
- Configuration: With software via Ethernet
- Access Point Connection: Via connection on front panel
- Input voltage: Via traffic controller backplane
- DC - 19 - 29V DC 550mA or AC - 21 - 28V AC 800mA
- Output voltage: 48V DC 6W max (Access Point power)
- Operating temperature: -25°C to +70°C

Access Point

- Range: typically up to 300m to Access Point (standard) or up to 600m to Access Point (Repeater Relay)
- Cards may be connected together to increase capacity
- Interfaces:
  - to/from detectors or repeater units via 802.15.4 PHY radio
  - to/from configuration device (PC) via TCP/IP over 10Base T Ethernet
  - to ST950 traffic controller via WiMag Standard Interface card (up to 20 detectors per card)
  - to controllers via WiMag Loop Detector Replacement card (up to 4 detectors per card)

- Frequency band: 2400 to 2483.5 MHz
- Power supply: 36 – 58V DC (48V DC nominal) form WiMag rack or WiMag Loop Detector replacement card
- Power Consumption: 2W
- Dimensions: 159mm x 159mm x 89mm
- Weight (including mounting kit): 1.4 kg
- Ingress protection rating: IP67
- Operating temperature: -40°C to +80°C

Repeater

- Range: Typically up to 300m to Access Point (standard) or up to 600m to Access Point (Repeater Relay)
- Cards may be connected together to increase capacity
- Interfaces: to/from detectors, Access Point and other repeater units
- Frequency band: 2400 to 2483.5 MHz
- Frequency channels: 16
- Power supply: user replaceable primary Li-SOCl2 3.6v battery pack
- Battery life: approximately 2 years (standard), 8 year (extended) model available
- Dimensions: 197mm x 166mm x 137mm
- Weight (inc. mounting kit): 2.25kg
- Ingress protection rating: IP65
- Operating temperature: -40°C to +80°C

Part numbers

Item	Part Number
WiMag Cycle Detection	640/4/90028/001
19" Rack Assembly	667/1/47260/100
Loop Detector Replacement Card	667/1/47280/000
Access Point	640/4/90030/001
Repeater (Standard – 2 years)	640/4/90029/001
Repeater (Extended – 8 years)	640/4/90029/000