



Autoscope Solo[®] Terra[™] Vehicle Detection System

Description

The *Autoscope Solo Terra* sensor is a color video detection and surveillance system that quickly installs with “3-wires-only,” reduces maintenance with ClearVision faceplate coating, and offers user-convenient *Terra* Technology. The *Solo Terra* sensor provides timely, high-quality traffic information required for today’s sophisticated traffic and Intelligent Transportation Systems (ITS).

Terra Technology leverages IP-based addressing with a unique Ethernet MAC address. It combines state-of-the-art advances in digital image signal processing, broadband communications, and System-on-Chip (SoC) processors to add versatility and boost performance.

EasyLink connectivity means simple installation into the traffic cabinet and integration into an agency’s IP-based communications network. A standard CAT-5 cable connects *Terra* Technology products into a network providing access to video, traffic data, and the *Autoscope Solo Terra* vehicle detection system. The reusable EasyLock connector simplifies the task of pulling “3-wires-only” either up or down the pole without splicing or the need for coaxial cable. Zoom configuration is managed at the cabinet.

Terra Technology provides MPEG-4 streaming video via the *Autoscope*[®] Video Player or any standard digital video player such as QuickTime. Depending on the available network bandwidth, viewing rates vary from 5 fps to 30 fps. In the traffic cabinet, the *Autoscope* Access Point (TAP) also provides full-motion video output to an analog video monitor. The TAP, using *Terra Technology*, interfaces between the video detection unit and the cabinet.

Terra Technology allows simple Internet browser interface with common Internet browsers in addition to implementing safe and secure password-protected access over the Internet. The embedded web server capability is a convenience to users, enabling access to streaming video, configuration editing, and system monitoring via the Internet.

Terra Technology employs an *Autoscope Terra* dual-core processor with sophisticated image processing and Advanced RISC Machine (ARM) general-purpose processing in a small SoC package for low power consumption. Multi-threaded software processes video images in real-time to detect traffic, extract data, identify incidents, and transmit detector outputs, while simultaneously streaming full-motion MPEG-4 video. The ClearVision faceplate coating helps keep the faceplate clean, even when missing routine maintenance.

Benefits

- Cost-effective solutions for traffic management and ITS
- Field-proven accuracy and reliability
- Easy to install and configure
- Flexible design meets a variety of detection and surveillance applications
- Superior to other detection systems in value and performance

Features

- EasyLink connectivity for IP-addressable broadband communications
- Web server interface for easy setup
- Streaming digital MPEG-4 video output
- User-definable password protection
- Vehicle detection, traffic data measurement, speed, and incident detection
- Bicycle detection
- Smoke/Fire detection
- Integrated color camera, zoom lens, and dual-core processor for advanced image processing
- Direct real-time iris and shutter speed control
- Fail-safe detector outputs with the *Autoscope* TAP
- Non-volatile memory data storage
- High energy transient protection
- Technologically advanced faceplate heater and ClearVision faceplate coating
- Local language support

Setup & Operation

The *Autoscope Solo Terra* unit makes it easier than ever to set up and customize to meet application requirements. The *Autoscope Configuration Wizard*[®] quickly sets up intersection or highway incident detection applications. Simple mouse or keyboard operations allow custom positioning for virtual detectors per field-of-view. Detection zones provide traffic count, presence, speed, and incident detection alarms. Incident types include freeway congestion, stopped vehicles, wrong direction vehicles, slow-moving vehicles, bicycles, pedestrians, smoke/fire, debris, or other customized alarms. Real-time polling or stored data include volume, occupancy, five vehicle classes by length, density, and other traffic data for selected periods or by phase.

Detector outputs can be assigned to interface with NEMA TS1/TS2, Type 170/179 and 2070 ATC controller via the optional *Autoscope Terra* Access Point (TAP). Traffic data is quickly integrated into proprietary software applications

Power

- 15W
- 110/220 VAC 50/60 Hz

Video

- Digital streaming MPEG-4 video output

Lens

- 22x Continuous focus lens
- Standard configuration:
 - Horizontal: 2.3° to 48°
 - Vertical: 1.8° to 37°
 - Focal Length: 0.16 in. to 3.46 in. (4 mm to 88 mm)
- Optional wide-angle configuration:
 - Horizontal: 4° to 74°
 - Vertical: 3° to 59°
 - Focal Length: 0.09 in. to 2.08 in. (2.4 mm to 52.8 mm)

Camera

- CCD ¼ in. diam. (4.5 mm)
- Horizontal resolution: NTSC > 470 TVL
- Sensitivity (at lens, full video, AGC off, 1/60 sec) 2.0 lux (color)
- Signal-to-noise > 50 dB
- Synchronization: Crystal lock

Effective Pixels

- NTSC: 380K (768 x 494)
- PAL: 440K (752 x 582)

Housing & Sunshield

- Image sensor and processor sealed in a water-proof and dust-tight NEMA-4 housing (IP 66)
- Thermostatically controlled faceplate heater
- Adjustable weather and sunshield with drip guard

with the optional *Autoscope* Software Developer's Kit (SDK). Extensive Boolean Logic capabilities provide flexibility in detector layouts to help validate an event or incident alarm.

Applications

- Traffic incident management for highways, tunnels, and bridges
- Junction control
- Traffic data collection
- Work-zone safety and traffic control
- Traveler information systems
- Bicycle detection
- Remote video surveillance

- Low-power thermostatically-controlled ITO faceplate heater
- Hydrophilic faceplate coating
- Weatherproof rear connector (IDC rapid termination industrial connector)

Communications

- EasyLink (broadband communications (up to 5 Mb/sec) with RJ-45 connection from required *Terra* Interface Panel (TIP)

Environmental

- -29°F to +165°F (-34°C to +74°C)
- Up to 100% relative humidity per MIL-E-5400T paragraph 4.3.24.4

Dimensions and Weight

Overall H x W x L (with sunshield and bracket):

- 8 in. x 4.3 in. x 21.3 in. (20 cm x 12 cm x 54 cm)
- 6.6 lb (3.0 kg)
- Mounting: Standard camera bracket tilt-top provided

Options

- Standard or wide-angle zoom lens
- Paint color

Warranty

- Three-year warranty
- Extended warranty package to six years

Regulatory

- CE EN 55022, EN 61000-6-1, EN 60950
- FCC Part 15, Class A

Product Support

- Product support and training by team of factory-trained *Autoscope* technical support specialists

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