Stalker Radar has distilled its speed measurement and detection expertise into its suite of Speed Measurement, Transportation, Sports, and Surface Velocity sensors. Stalker Radar precision is now available to engineers worldwide to address virtually any speed measurement application.

- Stationary Statistics Sensor
- Low Speed Sensor
- Hump Yard (Analog) Sensor
- Traffic Data Analysis Software
- Open Board Sensor
- 6° x 26° Sensor
- Traffic Speed Sensor
- Stationary Speed Sensor
- Surface Velocity Sensor
- Pro II Speed Sensor
Stalker sensors are engineered and manufactured to exacting standards and designed to fit seamlessly into a variety of OEM systems and processes. However, some applications require a unique set of characteristics and settings. Our Engineering team partners with OEM engineers and developers to create custom hardware and software solutions that help achieve their unique goals. We bring years of speed measurement and detection expertise to the table and make our knowledge available to address virtually any speed measurement challenge. If your particular speed measurement, transportation, traffic, sports, or surface velocity application has specific requirements, contact our Engineering Department.

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- 6° x 26° Sensor .................................................................... 5
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- Hump Yard (Analog) Sensor .................................................. 6
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Engineering Support and Development

Largest engineering team dedicated to development and refinement of radar products.

- Our commitment to product advancement has resulted in the largest patent portfolio of law enforcement radar technology in the industry.
- We rely on our own resident microwave experts who have produced the highest performance microwave radar assemblies available to the OEM.
- Following product development, our staff is dedicated to continuous product improvement. We constantly evaluate, refine, and strive to improve product quality, performance, and features.
Stalker Stationary Statistics Sensor

Stalker’s Stationary Statistics Sensor delivers high performance with low power requirements for pole mount or speed/message trailer applications.

The Stalker Stationary Statistics Sensor is a self-contained system that monitors and internally records traffic patterns on roadways in virtually any location and weather condition. In addition to its statistical capabilities, the unit can track up to 10 moving vehicles simultaneously.

It also operates as an ordinary speed sensor feeding strongest and fastest target information to external systems through a RS-232, RS-485, USB communications, or USB flash drive interface.

- Designed for use with the Stalker Traffic Data Analysis applications.
- RS-485 connection allows for multiple sensors to one controller.

Internal Real Time Clock for date/time stamps.

Performance

Range ........................................... >1300 ft. (400 m) for an average auto
Minimum Speed ................................ 1 mph (1.6 km/h)
Maximum Speed ............................. 200 mph (321.9 km/h)
Speed Resolution .............................. 0.1 mph (.16 km/h)
Speed Accuracy ............................... ±0.5 mph ±0.3%
±0.8 km/h ±0.3%
Directionality selections - Approaching, Receding, Both

Communications Ports

- 4 communications types
  - RS-485 full duplex (FD)
  - RS-485 half duplex (HD)
  - RS-232 with no flow control
  - USB
- Up to four simultaneous ports,
  - One RS-485 FD, one RS-232, and one USB port
  - Two RS-485 HD, one RS-232, and one USB port
- Baud rates – 9.6K to 921.6K baud
- 11 streaming protocols
- 3 polled protocols
- Any output protocol on any port
- Sensors are addressable with multi-drop capabilities

Trigger Output (not available on 200-0880-54, and -57)

- Electrically isolated trigger contacts
- One normally floating contact – pulled to ground for alarm state
- 60 volt max
- 400 mA max

Environmental

Operating temp............................. -22° F (-30° C) to +158° F (+70° C)
Storage temp................................. -40° F (-40° C) to +185° F (+85° C)
Ingress rating.............................. IP67

Memory Options

- Internal: 16 MB
- External: Memory stick

Physical characteristics

Size (LxWxD) excluding connector........ 4.4 x 3.9 x 1.6 inches (11.2 x 9.9 x 4 cm)
Weight ......................................<13 oz. (.35 kg)
Housing ...................................... Die-cast aluminum
Lens ........................................... HDPE
Electrical connector ....................... M12, 12 pin
Mounting .................................... 4 x 10-32 UNF

Microwave

Center frequency ......................... 24.125 GHz
Frequency range ......................... 100 MHz
Transmit power ........................... 100 mW
Beam width ................................. 30° by 32°
F.C.C. Approved. No license required.

Power

Voltage ..................................... 10 to 45 volts, DC
Current ................................... 80 mA @ 12 VDC typical
Power .....................................<1 watt

Protections

- Transient protection
- Reverse voltage protection
- Resettable Fuse

See center spread for Packages, Developer Kits, Cables, Connectors, Manuals, and Software.
### Traffic Data Analysis

Using data captured from the **Stalker Traffic Statistics Sensors**, updated analysis control allows you to take raw data and display it by count vs time, count vs speed, and 85th percentile, just to name a few. Data can be split, graphed, filtered, and then rendered in a color report designed with Agency branding and support information.

Beginning with the setup, the actual sensor can be configured. Then, the intuitive survey management tools walk the user through calendar setup, location details, speed and time resolutions, vehicle classification, speeds, distances, and more.

See page 7 for more information.
Stalker Open Board Stationary Statistic Sensor

The Stalker Open Board Sensor is the perfect solution for applications where a housing is not needed.

<table>
<thead>
<tr>
<th>FEATURES</th>
</tr>
</thead>
<tbody>
<tr>
<td>mph, km/h, knots, m/s, ft/s</td>
</tr>
<tr>
<td>RS-232, RS-485</td>
</tr>
<tr>
<td>11 streaming, 3 polled protocols</td>
</tr>
<tr>
<td>Low power consumption &lt; 1 watt</td>
</tr>
</tbody>
</table>

Performance

Range .................................................. >1300 ft. (400 m) for an average auto
Minimum Speed ...................................... 1 mph (1.6 km/h)
Maximum Speed .................................... 200 mph (321.9 km/h)
Speed Resolution ................................. 0.1 mph (.16km/h)
Speed Accuracy ...................................... ±0.5 mph ±0.3%
.............................................. ±0.8 km/h ±0.3%
Directionality selections - Approaching, Receding, Both

Communications Ports

- 4 communications types
- RS-485 full duplex (FD)
- RS-485 half duplex (HD)
- RS-232 with no flow control
- USB
- Up to four simultaneous ports,
  - One RS-485 FD, one RS-232, and one USB port
  - Two RS-485 HD, one RS-232, and one USB port
- Baud rates – 9.6K to 921.6K baud
- 11 streaming protocols
- 3 polled protocols
- Any output protocol on any port
- Sensors are addressable with multi-drop capabilities

Trigger Output

- Electrically isolated trigger contacts
- One normally floating contact – pulled to ground for alarm state
- 60 volt max
- 400 mA max

Environmental

Operating temp.........................-22° F (-30° C) to +158° F (+70° C)
Storage temp......................-40° F (-40° C) to +185° F (+85° C)

Physical characteristics

Size (LxWxD) excluding connector: 3.32 x 2.76 x 1.1 inches
(8.43 x 7.01 x 2.79 cm)
Weight ............................................ 3.2 oz (.09 kg)
Mounting........................................... Mounting holes for flexible OEM mounting

Microwave

Center frequency ............................... 24.125 GHz
Frequency range ............................. 100 MHz
Transmit power ......................... 100 mW
Beam width.............................. 30° by 32°

Power

Voltage............................................. 10 to 45 volts, DC
Current (24 volts DC).................... 80 mA @ 12 VDC typical
Power ............................................. <1 watt

Protections

- Transient protection
- Reverse voltage protection
- Resettable Fuse

Traffic Statistics Features

- Collects traffic volume, speeds, direction and classification over time
- 16 MB of Internal data memory - autonomous
- Collects data in four different modes
- Tracks up to 10 moving vehicles simultaneously
- Streaming raw data output
- Works with Stalker Traffic Analyst for data analysis and presentation

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200-1004-02</td>
<td>Stalker Stationary Statistics Sensor without enclosure</td>
</tr>
</tbody>
</table>

See center spread for Packages, Developer Kits, Cables, Connectors, Manuals, and Software.
Stalker Radar

**Stalker 6° x 26° Stationary Statistics Sensor**

*Narrow horizontal beam sensor ideal for lane discrimination.*

**Features**

- mph, km/h, knots, m/s, ft/s
- RS-232, RS-485, USB
- 11 streaming, 3 polled protocols
- Tracks up to 10 moving vehicles simultaneously
- Narrow horizontal beam for single lane applications

A narrow 6° beam, adjustable beam angle, and open-frame design allow flexible mounting options for OEM developers integrating it into their systems.

The 6° x 26° Stationary Statistics Sensor utilizes digital signal processing enabling it to track vehicles either moving toward it, away from it, or both directions simultaneously. Additionally, it has target recognition/filtering settings and a speed alarm output.

This sensor also has the capability to store traffic volume, speeds, direction, and classification in the unit.

The Stalker Traffic Data Analysis applications are available to review, analyze, and present the traffic data.

RS-485 connection allows for multiple sensors to one controller.

**Performance**

- Range: >1300 ft. (400 m) for an average auto
- Minimum Speed: 1 mph (1.6 km/h)
- Maximum Speed: 200 mph (321.9 km/h)
- Speed Resolution: 0.1 mph (.16 km/h)
- Speed Accuracy: ±0.5 mph ±0.3%

**Communications Ports**

- 4 communications types
  - RS-485 full duplex (FD)
  - RS-485 half duplex (HD)
  - RS-232 with no flow control
  - USB
- Up to four simultaneous ports,
  - One RS-485 FD, one RS-232, and one USB port
  - Two RS-485 HD, one RS-232, and one USB port
- Baud rates – 9.6K to 460.8K baud
- 11 streaming protocols
- 3 polled protocols
- Any output protocol on any port
- Sensors are addressable with multi-drop capabilities

**Directionality selections**

- Approaching, Receding, Both

**Speed Alarm Output**

- One normally floating contact – pulled to ground for alarm state
- 60 volt max
- 400 mA max

**Environmental**

- Operating temp: -22° F (-30° C) to +185° F (+85° C)
- Storage temp: -40° F (-40° C) to +185° F (+85° C)

**Power**

- Voltage: 10 to 45 volts, DC
- Current: 250mA @ 12 VDC typical
- Power: <3 watt
- Protections
  - Transient protection
  - Reverse voltage
  - Resettable Fuse

**Microwave**

- Center frequency: 24.125 GHz
- Frequency range: 100 MHz
- Transmit power: 200 mW
- Beam width: 6° by 26°

**Physical characteristics**

- Size (LxWxD) excluding connector...6.1 x 3.1 x 1.52 inches (15.5 x 7.9 x 3.86 cm)
- Weight: < 8 oz. (.23 kg)
- Mounting: slots for flexible OEM mounting

See center spread for Packages, Developer Kits, Cables, Connectors, Manuals, and Software.
Stalker Low Speed Sensor

**FEATURES**
- mph, km/h, knots, m/s, ft/s
- RS-232, RS-485, USB
- 11 streaming, 3 polled protocols
- IP67 rated
- Low power consumption < 1 watt

The ideal sensor for mining, agriculture, and harbor applications where accurate, low speed is essential.

The Stalker Low Speed Sensor measures speeds from 0.1 mph to 70 mph with low power consumption and competitive price.

RS-485 connection allows for multiple sensors to one controller.

Communication, Output, Environmental, Physical, and Microwave specs are the same as the Stalker Stationary Statistics Sensor, pages 2-3.

**Performance**
- Range ........................................... >1300 ft. (400 m) for an average auto
- Minimum Speed .................................. 0.1 mph (0.1 km/h)
- Maximum Speed ................................. 70 mph (112 km/h)
- Speed Resolution ............................... 0.01 mph (.016 km/h)
- Speed Accuracy ................................ ±0.15 mph ±0.3% ±0.24 km/h ±0.3%
- Directionality selections ...................... Approaching, Receding, Both

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200-0880-60</td>
<td>Rear Port RS-232, and RS-485</td>
</tr>
</tbody>
</table>

Hump Yard (Analog) Sensor

**FEATURES**
- mph, km/h, knots, m/s, ft/s
- RS-232 configuration
- IP67 rated
- Analog output

Designed for Railroad Hump Yard applications where accuracy matters.

Analog output signal frequency is proportional to target speed. RS-232 used for configuration. Output frequency is 71.97 Hz/mph (44.72 Hz/km/h)

**Performance**
- Range ........................................... >1300 ft. (400 m) for an average auto
- Minimum Speed .................................. <1 mph (1.6 km/h)
- Maximum Speed ................................ 200 mph (321.9 km/h)
- Speed Accuracy ................................ ±0.3%

- Isolated Bi-polar outputs, ±12 volt pp max
- Fixed gain or automatic gain control modes

**Microwave**
- Center frequency ............................. 24.125 GHz
- Frequency range .............................. 100 MHz
- Transmit power ................................ 100 mW
- Beam width ................................. 30° by 32°
- F.C.C. Approved. No license required.

**Power**
- Voltage .......................................... 10 to 22 volts, DC
- Current ......................................... 210 mA @ 12 VDC typical
- Power ........................................... 2.5 watt

**Protections**
- Transient protection
- Reverse voltage protection
- Resettable Fuse

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200-1135-50</td>
<td>Rear Port RS-232</td>
</tr>
</tbody>
</table>

StalkerRadar.com
Stalker Traffic Data Analysis

Two powerful ways to make traffic statistics work for you

Stalker Traffic Analyst

Powerful traffic statistic tools are essential when analyzing aggregate data.

The new Stalker Traffic Analyst is that tool. Updated analysis controls allow the user to import raw data and display it by count vs time, count vs speed, and 85th percentile, just to name a few. Data can be split, graphed, filtered, and then rendered in a color report designed with Agency Branding and support information.

Beginning with the setup, intuitive survey management tools walk the user through calendar setup, location details, speed and time resolutions, vehicle classification, speeds, distances, and more.

- Intuitive Survey and Calendar setup
- Powerful Visual analysis controlled by floating pallets
- Easy, user-defined report generation
- Compare and toggle between multiple reports
- Group file operations into project folder

Stalker EasyAnalyst

Making analyzing and interpreting traffic data as easy as 1, 2, 3

EasyAnalyst, Stalker Radar’s latest traffic analysis application, is by far the easiest to use statistical software package available.

EasyAnalyst imports data directly from all statistics-enabled Stalker trailers, sensors, and signs. There’s no data conversion or other complicated computer operation.

The data are automatically formatted into reports and graphics which can be assembled, printed, and saved into templates for later use.

Import your data, enter your location information, and choose your report. It’s that simple.

- Speed Compliance Report
- Speed Enforcement Report
- Speed Profile Report
- Traffic Density Report
- Traffic Matrix Report
- Speed Profile Bubble
- Traffic Volume Report

Choose data - report - output. Done!
## K-Band Sensors

<table>
<thead>
<tr>
<th>Sensor</th>
<th>Part number</th>
<th>Description</th>
<th>Range</th>
<th>Package(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Stationary Statistics Sensor</strong></td>
<td>200-0880-53</td>
<td>Base unit with connector moved to rear.</td>
<td>.23 mi. .37 km</td>
<td>831-2298-00 Base* 831-2301-00 with Developer Kit**</td>
</tr>
<tr>
<td></td>
<td>200-1174-53</td>
<td>Base unit with rear connector. Includes CE certification for embedded use only.</td>
<td>.23 mi. .37 km</td>
<td>831-2296-00 Base* 831-2297-00 with Developer Kit**</td>
</tr>
<tr>
<td></td>
<td>200-0880-54</td>
<td>Base unit with external interface replaced with a single USB 2.0 client connection.</td>
<td>.23 mi. .37 km</td>
<td>831-2402-00 Base*</td>
</tr>
<tr>
<td></td>
<td>200-0880-56</td>
<td>Base unit with connections for external USB memory stick.</td>
<td>.23 mi. .37 km</td>
<td>831-2403-00 Base*</td>
</tr>
<tr>
<td></td>
<td>200-0880-57</td>
<td>Base unit with connections for external USB memory stick and USB 2.0 comm port.</td>
<td>.23 mi. .37 km</td>
<td>831-2290-00 Base*</td>
</tr>
<tr>
<td></td>
<td>200-1033-11</td>
<td>OEM version with 6 x 26 beam width for lane discrimination use.</td>
<td>.23 mi. .37 km</td>
<td>831-2405-00 831-2406-00 with M12 connector</td>
</tr>
<tr>
<td></td>
<td>200-1004-02</td>
<td>OEM version of base unit.</td>
<td>.23 mi. .37 km</td>
<td>831-2201-00</td>
</tr>
<tr>
<td><strong>Low Speed Sensor</strong></td>
<td>200-0880-60</td>
<td>Base unit functionality, for low speed targets. Uses rear connector.</td>
<td>.23 mi. .37 km</td>
<td>831-2208-00 Base* 831-2209-00 with Developer Kit**</td>
</tr>
<tr>
<td><strong>Hump Yard (Analog) Sensor</strong></td>
<td>200-1135-50</td>
<td>Analog output sensor. See page 6 for description.</td>
<td></td>
<td>835-2211-00 Base</td>
</tr>
</tbody>
</table>

---

* **Base Packages:** Base packages consist of a sensor, unterminated cable, software, manual, and Certificate of Accuracy.
<table>
<thead>
<tr>
<th>Developer Kit(s)</th>
<th>I/O Cable</th>
<th>Connector(s)</th>
<th>Tech. Manual</th>
<th>User Manual</th>
<th>Software</th>
</tr>
</thead>
<tbody>
<tr>
<td>200-1028-21 USB</td>
<td>015-2519-02 USB (waterproof)</td>
<td>011-0131-00</td>
<td>011-0131-01 (Speed Sensor) 011-0132-00 (Traffic Sensor) 011-0146-00 (App)</td>
<td>Stalker Traffic Statistics App 200-0973-00 &amp; Dashboard 200-0972-00</td>
<td></td>
</tr>
<tr>
<td>200-1026-21</td>
<td>155-2357-01 USB</td>
<td>011-0131-00</td>
<td>011-0131-01 (Speed Sensor) 011-0132-00 (Traffic Sensor) 011-0146-00 (App)</td>
<td>Stalker Traffic Statistics App 200-0973-00 &amp; Dashboard 200-0972-00</td>
<td></td>
</tr>
<tr>
<td>200-1026-21</td>
<td>155-2463-01 USB</td>
<td>011-0131-00</td>
<td>011-0131-01 (Speed Sensor) 011-0132-00 (Traffic Sensor) 011-0146-00 (App)</td>
<td>Stalker Traffic Statistics App 200-0973-00 &amp; Dashboard 200-0972-00</td>
<td></td>
</tr>
<tr>
<td>N/A</td>
<td>155-2461-00 155-2445-00</td>
<td>011-0131-00</td>
<td>011-0131-01 (Speed Sensor) 011-0132-00 (Traffic Sensor) 011-0146-00 (App)</td>
<td>Stalker Traffic Statistics App 200-0973-00 &amp; Dashboard 200-0972-00</td>
<td></td>
</tr>
<tr>
<td>200-1004-02</td>
<td>026-0056-01 (right angle)</td>
<td>011-0223-00</td>
<td>Special order</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Packages with Developer Kits:** Packages with Developer Kits consist of sensor, Developer Kit (see page 17 for more information), tuning fork, mount, manual(s), and Certificate of Accuracy.
Stalker Stationary Speed Sensor

Stalker’s Stationary Speed Sensor, for measuring speed from a fixed position - ideal for lane discrimination and wrong-way detection applications

**Features**
- Stationary-only operation
- Direction sensing (closing or away, simultaneous closing/away)
- Longest range on the market - up to 2 miles for standard vehicle
- Strongest and faster target detection in all modes
- Adjustable sensitivity
- RS-232 or RS-485 serial interface with baud rates up to 38400
- Selectable output protocols and data formats

**Control and Configuration Settings**

<table>
<thead>
<tr>
<th>Basic Configuration</th>
<th>Serial Port Configuration:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transmitter Control Zone</td>
<td>Baud Rate</td>
</tr>
<tr>
<td>Unit of Measure</td>
<td>Output Format</td>
</tr>
<tr>
<td>Unit Resolution</td>
<td>Leading Zero Character</td>
</tr>
<tr>
<td>Faster Target Tracking</td>
<td>Format D Direction Character Enable (RS-232)</td>
</tr>
<tr>
<td>AUX Pin Configuration</td>
<td>Zeros After Target (RS-232)</td>
</tr>
<tr>
<td>Serial Port Configuration:</td>
<td>Message Period</td>
</tr>
<tr>
<td>Voltage: 9 - 16 VDC for SN ST6560 and below</td>
<td>Format D Update on Change Only (RS-232)</td>
</tr>
<tr>
<td>9 - 24 VDC for SN ST6561 and above</td>
<td>Format D Zero Report (RS-232)</td>
</tr>
<tr>
<td>Current: (at 12 VDC nominal)</td>
<td>Polled Modes D0-D4 (RS-232)</td>
</tr>
<tr>
<td>Transmitter on: 370 mA</td>
<td></td>
</tr>
<tr>
<td>Transmitter off: 100 mA</td>
<td></td>
</tr>
</tbody>
</table>

**Target Recognition:**
- Opposite Lane/Stationary Sensitivity
- Fine Sensitivity Adjust
- Sensitivity Hysteresis
- Low Sensitivity
- Target Strength Sensitivity
- Target Acquisition Quality
- Target Loss Quality

**Target Filtering:**
- Stationary Low Cutoff
- Spurious Speed Filter
- Max AGC Gain
- Min AGC Gain
- Current AGC Gain

**Speed Presentation:**
- Cosine 1 Angle
- Cosine 2 Angle
- Holdover Delay

**Locking Targets:**
- Lock Option
- Faster Locking Enable
- Strongest Lock
- Fast Lock

**Speed Alarm:**
- Alarm Speed Threshold

**Audio:**
- Doppler Audio Volume
- Aud 0 Enable
- Variable Doppler Loudness
- Squelch
- Beep Volume

**TX Power Save:**
- TX On Time
- TX Off Time
- Keep TX On with Target
- Max TX On Time

**Testing:**
- Fork Enable
- Auto Test Period
- Auto Test Mode
- Enhanced Test

**System:**
- Get Product ID
- Get Product Type
- Get Software Version
- Speed Sensor Address (RS-485 only)

**General Specifications**
- **Type:** Stationary Doppler Radar Speed Sensor
- **Operating Frequency:** 34.7 GHz (Ka-Band)
- **Stability:** ±100 MHz
- **Communication Preference:** RS-232 or RS-485 available as separate models

**Power Requirements:**
- **Voltage:**
  - 9 - 16 VDC for SN ST6560 and below
  - 9 - 24 VDC for SN ST6561 and above
- **Current:**
  - (at 12 VDC nominal)
  - Transmitter on: 370 mA
  - Transmitter off: 100 mA

**Environmental:**
- Operating: -22° F (-30° C) to +158° F (+70° C), 90% relative humidity
- Non-operating: -40° F (-40° C) to +185° F (+85° C)

**Mechanical:**
- Weight – 1.15 lb. (0.52 kg)
- Diameter – 2.6 in. (6.7 cm)
- Length – 4.7 in. (11.8 cm)
- Case Material – Aluminum die cast

**Accuracy:**
- +/- 0.3% - Speeds are rounded down to the nearest unit or tenths of a unit depending on the unit resolution setting

**Audio Output:**
- A 3.3Vpp pulse-width modulated (PWM) audio output signal is provided – must be filtered and amplified for best audio quality.

**Auto Self-Test:**
- Performed every 10 minutes while transmitting

**Stationary Speed Range:**
- Stationary low speed threshold configurable:
  - 1 mph to 200 mph (1.6 to 321 km/h)
  - 12 mph to 200 mph (19 to 321 km/h)

**Microwave Specifications**
- **Antenna:** Conical horn
- **Polarization:** Circular
- **3DB Beamwidth:** 12° ±1°
- **RF Source:** Gunn-Effect diode
- **Receiver Type:** Two direct-conversion homodyne receivers using four low-noise Schottky barrier mixer diodes
- **Power Output:**
  - 10 mW minimum
  - 15 mW nominal
  - 25 mW maximum
- **Power Density:** 1 mW/cm² maximum at 5 cm from lens

See pages 14-15 for Packages, Developer Kits, Cables, Connectors, Manuals, and Software.
Stalker Sensors

**Stalker’s Traffic Speed Sensor when the application requires a radar with both moving, stationary, and direction-sensing capabilities.**

### Microwave Specifications

- **Antenna:** Conical horn
- **Polarization:** Circular
- **3DB Beamwidth:** 12° ±1°
- **RF Source:** Gunn-Effect diode
- **Receiver Type:** Two direct-conversion homodyne receivers using four low-noise Schottky barrier mixer diodes
- **Power Output:**
  - 10 mW minimum
  - 15 mW nominal
  - 25 mW maximum
- **Power Density:** 1 mW/cm² maximum at 5 cm from lens

### Control and Configuration Settings

#### Basic Configuration

- Transmitter Control
- Mode
- Zone
- Unit of Measure
- Unit Resolution
- Faster Target Tracking
- AUX Pin Configuration

#### Serial Port Configuration

- Baud Rate
- Output Format
- Leading Zero Character
- Message Period

#### Target Recognition

- Opposite Lane/Stationary Sensitivity
- Same Lane Sensitivity
- Fine Sensitivity Adjust
- Patrol Speed Blank

#### Target Filtering

- Stationary Low Cutoff
- Patrol Speed Low Cutoff
- Double Suppression
- Max AGC Gain
- Min AGC Gain
- Current AGC Gain

#### Speed Presentation

- Holdover Delay

#### Locking Targets

- Lock Option
- Faster Locking Enable
- Strongest Lock
- Fast Lock
- Patrol Speed Blank

#### Speed Alarm

- Alarm Speed Threshold

#### Audio

- Doppler Audio Volume
- Aud 0 Enable
- Variable Doppler Loudness
- Squelch
- Beep Volume

#### Testing

- Fork Enable
- Auto Test Period
- Auto Test Mode
- Enhanced Test

#### System

- Get Product ID
- Get Product Type
- Get Software Version

---

See pages 14-15 for Packages, Developer Kits, Cables, Connectors, Manuals, and Software.
The Pro II Speed Sensor is a complete and highly-accurate Doppler Radar in a small, rugged waterproof housing. The sensor can measure the speed of a wide variety of objects including baseballs, vehicles, tennis balls, hockey pucks, and more.

The unit is available in an RS-232 model and an RS-485 model and includes complete software support.

The Speed Sensor II utilizes digital signal processing that enables it to track vehicles either moving toward it, vehicles moving away, or both directions simultaneously.

RS-485 connection allows for multiple sensors to one controller.

### General Specifications
- **Product Type**: Stationary Doppler Radar Speed Sensor
- **Processor**: Digital Signal Processor
- **Operating Temperatures**: -30°C to +70°C (-22°F to +158°F), 90% relative humidity
- **Storage Temperatures**: -40°C to +85°C (-40°F to +185°F)

### Microwave Specifications
- **Operating Frequency**: 34.7 GHz (Ka-Band)
- **Frequency Stability**: ±100 MHz
- **Antenna Type**: Conical Horn
- **Polarization**: Circular
- **3 db Beam Width**: 12°±1°
- **Microwave Source**: Gunn-Effect Diode
- **Receiver Type**: Two direct-conversion homodyne receivers using four low-noise Schottky barrier mixer diodes
- **Power Output**: 10 mW minimum
- **Power Density**: 1 mW/cm² maximum at 5 cm from lens

### Performance Specifications
- **Speed Range**: Max target speed: 800+ MPH  
  Min target speed: < 1 MPH
- **Accuracy**: +/- 0.3%  
  In one's resolution, speeds are rounded to nearest integer.  
  In tenths resolution, speeds are rounded to nearest tenth.
- **Maximum Clocking Distance**: 500 Feet for baseballs  
  1.75 miles for an average auto
- **Audio Output**: Raw 3.3 V analog audio output signal is provided for Doppler audio – must be filtered and amplified for best audio quality.
- **Speed Alarm Output**: With speeds below the Alarm Threshold, the Aux pin output is 0.0V  
  With speeds at or above the Alarm Threshold, the Aux pin is 3.3V with a 1k ohm source impedance.

### Physical Specifications
- **Weight**: 1.15 lb (0.52 kg)
- **Diameter**: 2.6 in (6.7 cm)
- **Length**: 4.7 in (11.8 cm)
- **Case Material**: Aluminum die cast

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See pages 14-15 for Packages, Developer Kits, Cables, Connectors, Manuals, and Software.
Stalker Surface Velocity Sensor

Stalker’s Surface Velocity Sensor is the gold standard in OEM workflow management.

The Stalker SVR Sensor features a rugged cast-metal exterior and the world’s most sensitive transmitter/receiver as well as miniaturized and modernized electronics. Its direction sensing software and updated algorithms position the SVR Sensor as a new-generation radar ideal for the task of accurate and reliable water flow measurement. Moreover, the SVR Sensor’s Ka-Band performance measuring water flow is superior to the K-Band used by some of its competitors’ radars.

To make it better suited for measuring from elevated locations, the SVR Sensor can be easily adjusted by the end user to compensate its speed reading based on the angle that the radar points at the target flow.

The SVR Sensor has a speed range of 0.2 m/s to 18.0 m/s – from below 1 mph to over 40 mph – with an accuracy of ±0.1 m/s. And it measures in meters/second, feet/second, miles per hour, and kilometers per hour.

General Specifications

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>Surface Velocity Radar Sensor</td>
</tr>
<tr>
<td>Operating Frequency</td>
<td>34.7 GHz (Ka-Band)</td>
</tr>
<tr>
<td>Stability</td>
<td>±100 MHz</td>
</tr>
<tr>
<td>Power Requirements</td>
<td>Voltage: 9 - 24 VDC</td>
</tr>
<tr>
<td></td>
<td>Current: (at 12 VDC nominal) 470 mA</td>
</tr>
<tr>
<td></td>
<td>Transmitter off: 100 mA</td>
</tr>
<tr>
<td>Environmental</td>
<td>Operating: -22° F (-30° C) to +158° F (+70° C), 90% relative humidity. Non-operating: -40° F (-40° C) to +185° F (+85° C)</td>
</tr>
<tr>
<td>Mechanical</td>
<td>Weight – 1.15 lb. (0.52 kg)</td>
</tr>
<tr>
<td></td>
<td>Diameter – 2.6 in. (6.7 cm)</td>
</tr>
<tr>
<td></td>
<td>Length – 4.7 in. (11.8 cm)</td>
</tr>
<tr>
<td></td>
<td>Case Material – Aluminum die cast</td>
</tr>
<tr>
<td>Accuracy</td>
<td>±0.1 m/s</td>
</tr>
<tr>
<td>Auto Self-Test</td>
<td>Performed every 10 minutes while transmitting</td>
</tr>
<tr>
<td>Speed Range</td>
<td>0.2 m/s to 18 m/s</td>
</tr>
</tbody>
</table>

Microwave Specifications

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antenna</td>
<td>Conical horn</td>
</tr>
<tr>
<td>Polarization</td>
<td>Circular</td>
</tr>
<tr>
<td>3DB Beamwidth</td>
<td>12° ±1°</td>
</tr>
<tr>
<td>RF Source</td>
<td>Gunn-Effect diode</td>
</tr>
<tr>
<td>Receiver Type</td>
<td>Two direct-conversion homodyne receivers using four low-noise Schottky barrier mixer diodes</td>
</tr>
<tr>
<td>Power Output</td>
<td>20 mW minimum</td>
</tr>
<tr>
<td></td>
<td>25 mW nominal</td>
</tr>
<tr>
<td></td>
<td>50 mW maximum</td>
</tr>
<tr>
<td>Power Density</td>
<td>2 mW/cm² maximum at 5 cm from lens</td>
</tr>
</tbody>
</table>

Factory Configuration (defaults in Bold)

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serial Port Baud Rate</td>
<td>9600</td>
</tr>
<tr>
<td>Communications Protocol</td>
<td>RS-232 or RS-485 - build option</td>
</tr>
</tbody>
</table>

Field Configuration (defaults in Bold)

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Units</td>
<td>ft/s (feet/sec), m/s (meters/sec), mph (miles/hour), or km/h (kilometers/hour)</td>
</tr>
<tr>
<td>Radar Zone</td>
<td>Away, Closing or Auto directional sensitivity may be selected</td>
</tr>
<tr>
<td>Serial Port Data Format</td>
<td>Current Speed only or longer messages with speed, strength, and averages.</td>
</tr>
<tr>
<td>Horizontal Angle</td>
<td>From 0° to 70°</td>
</tr>
<tr>
<td>Vertical Angle</td>
<td>From 0° to 70°</td>
</tr>
<tr>
<td>Sensitivity</td>
<td>4 levels of field sensitivity may be selected (1/2/3/4 max)</td>
</tr>
</tbody>
</table>

See pages 14-15 for Packages, Developer Kits, Cables, Connectors, Manuals, and Software.
## Ka-Band Sensors

<table>
<thead>
<tr>
<th>Sensor</th>
<th>Part number</th>
<th>Description</th>
<th>Range</th>
<th>Package(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stalker Pro II Speed Sensor</td>
<td>200-0853-00 RS-232</td>
<td>Ka-Band - Scoreboards, Tennis facilities. Directional - tracks a wide variety of objects including baseballs, vehicles, tennis balls, and hockey pucks. PC application available for configuration.</td>
<td>1.75 mi. 2.81 km</td>
<td>818-1001-00 RS-232 with Developer Kit** 818-1002-00 RS-485 with Developer Kit**</td>
</tr>
<tr>
<td></td>
<td>200-0854-00 RS-485</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stalker Traffic Speed Sensor</td>
<td>200-0644-00</td>
<td>Ka-Band - For speed sensing application requiring the monitoring of target speed in a mobile environment. Direction sensing, with both moving and stationary capabilities.</td>
<td>1.75 mi. 2.81 km</td>
<td>818-2410-00 RS-232 Base* 818-2411-00 RS-232 with Developer Kit**</td>
</tr>
<tr>
<td>Stalker Stationary Speed Sensor</td>
<td>200-0644-01 RS-232</td>
<td>Ka-Band - For measuring speed from a fixed position - speed warning signs, traffic studies, rail crossing safety, rail yard operations.</td>
<td>1.75 mi. 2.81 km</td>
<td>818-0003-00 RS-232 Base* 818-0005-00 RS-485 Base* 818-0001-00 RS-232 with Developer Kit** 818-0000-00 RS-485 with Developer Kit**</td>
</tr>
<tr>
<td></td>
<td>200-0679-01 RS-485</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>200-0644-50 RS-232</td>
<td>(right angle connector)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stalker Surface Velocity Sensor</td>
<td>200-0814-00 RS-232</td>
<td>Ka-Band - Tilt compensation and DSP, combined with direction sensitivity, horizontal angle adjustment, and 4 levels of sensitivity for all water flow measurement applications.</td>
<td></td>
<td>818-0007-00 RS-232 Base* 818-0008-00 RS-485 Base* 818-0004-00 RS-232 with Developer Kit** 818-0006-00 RS-485 with Developer Kit**</td>
</tr>
<tr>
<td></td>
<td>200-0914-00 RS-485</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* **Base Packages:** Base packages consist of a sensor, unterminated cable, software, manual, and Certificate of Accuracy.
<table>
<thead>
<tr>
<th>Developer Kit(s)</th>
<th>I/O Cable</th>
<th>Connector(s)</th>
<th>User Manual</th>
<th>Software</th>
</tr>
</thead>
<tbody>
<tr>
<td>200-0863-00 RS-232 200-0864-00 RS-485</td>
<td>155-2223-00 RS-232 155-2239-02 RS-485</td>
<td><img src="image1.png" alt="Connector" /></td>
<td>011-0116-00</td>
<td>Scoreboard App 200-0865-00</td>
</tr>
<tr>
<td>200-0702-00 RS-232</td>
<td>155-2223-00</td>
<td><img src="image2.png" alt="Connector" /></td>
<td>011-0110-00</td>
<td>Dashboard 200-0707-00</td>
</tr>
<tr>
<td>200-0702-00 RS-232 200-0730-00 RS-485</td>
<td>155-2223-00 RS-232 155-2239-02 RS-485</td>
<td><img src="image3.png" alt="Connector" /></td>
<td>011-0110-00</td>
<td>Dashboard 200-0707-00</td>
</tr>
<tr>
<td>N/A</td>
<td>155-2223-00 RS-232 155-2239-02 RS-485</td>
<td><img src="image4.png" alt="Connector" /></td>
<td>011-0105-00</td>
<td>N/A</td>
</tr>
</tbody>
</table>

**Packages with Developer Kits:** Packages with Developer Kits consist of sensor, Developer Kit (see page 16 for more information), tuning fork, dash mount, manual(s), and Certificate of Accuracy.
Developer Kits

Stalker Sensor Developer Kits
Sensor Developer Kits are designed to perform a broad array of tasks in a number of configurations. Some systems use the sensors with the Stalker Sensor Wizard Application in RS-232, RS-485, or USB while other sensors are connected directly to their own proprietary systems, also in RS-232 or RS-485 interface.

The kits themselves contain parts which may or may not pertain to your specific application, but can be ordered separately. For example, in some cases, once the sensor is configured, the Interface Box is no longer necessary. And, the Interface Box can be used over and over to configure, test, and reset sensors.

Overall, the purpose of the Stalker Developer Kit:
- Configure or test the sensor
- Interface with Stalker Sensor Wizard Application
- In the case of setup issues, reset the sensor to product defaults

Ka-Band Sensors

RS-232 Developer Kit
(200-0702-00 & 200-0863-00)

The Stalker RS-232 Developer Kit contains the following:
- RS-232 Interface Box (200-0702-01)
- Power and I/O Cable (12’) (155-2223-00)
- Application (with Config files)
- Serial cable (10’) (155-2130-00)
- USB-to-Serial Port (DB9) Adapter (015-0196-00)

RS-485 Developer Kit
(200-0730-00 & 200-0864-00)

The Stalker RS-485 Developer Kit contains the following:
- RS-485 Interface Box (200-0730-01)
- Power and I/O Cable (82’) (155-2239-02)
- Application (with Config files)
- Serial cable (10’) (155-2130-00)
- USB-to-Serial (DB9) Port Adapter (015-0196-00)
K-Band Sensors

**Combined Data/Power Developer Kit** (200-1026-01)
The Developer Kit contains the following:
- Interface Box (155-2360-01)
- Switching Power Supply with US/Euro plug sets (200-1021-00)
- Application with Config files (200-0972-00)
- USB-to-Serial (DB9) Port Adapter (015-0196-00)
- Serial cable (10’) (155-2130-00)
- Sensor Mount and Pole Clamp

**Combined Data/Power Statistics Developer Kit** (200-1026-21)
The Developer Kit contains the following:
- Interface Box (155-2360-01)
- Switching Power Supply with US/Euro plug sets (200-1021-00)
- Application with Config files (200-0972-00)
- USB-to-Serial (DB9) Port Adapter (015-0196-00)
- Serial cable (10’) (155-2130-00)
- Sensor Mount and Pole Clamp
- Statistics Application (200-0973-00)

**Stalker Sensor Wizard Application**
The new Stalker Sensor Wizard application, included with all new sensors, allows for easy configuration, testing, and troubleshooting. In addition, multiple sensors can be configured using saved settings for quick and easy duplication.