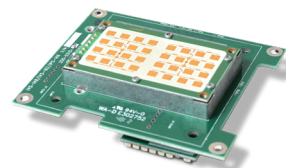
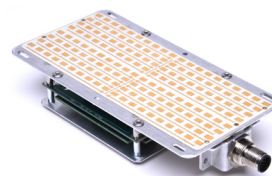


High Performance Sensors for OEM Applications

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
- T Analysis Software
- Open Board Sensor
- 6° x 26° Sensor
- T
- Stationary Speed Sensor
- Surface Velocity Sensor
- Pro II Speed Sensor



STALKER[®]

Stalker Sensors

K-Band Sensors

Stationary Statistic Sensor 2-3
Open Board Sensor 4
6° x 26° Sensor 5
Low Speed Sensor 6
Hump Yard (Analog) Sensor 6
T Analysis Applications 7
K-Band Sensor Grid 8-9

Ka-Band Sensors

Stationary Speed Sensor 10
T 11
Pro II Speed Sensor 12
Surface Velocity Sensor 13
Ka-Band Sensor Grid 14-15

Developer Kits 16-17

Engineering Support and Development

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

Stalker sensors are engineered and manufactured to exacting 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.

- 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, , performance, and features.

Engineering Department.

Stalker Stationary Statistics Sensor

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



FEATURES
■ Low power consumption < 1 watt
■ Collects traffic volume, speeds, direction and classification over time
■ Internal data memory - autonomous
■ Collects data in four different modes
■ Tracks up to 10 moving vehicles simultaneously
■ IP67 rated
■ Streaming raw data output
■ Works with Stalker Traffic Analyst for data analysis and presentation

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 >400 m
for an average auto
Minimum Speed..... 1.6 km/h
Maximum Speed..... 321.9 km/h
Speed Resolution 0.16km/h
Speed Accuracy..... ±0.8 kph ±0.3%

Directionality selections - Approaching, Receding, Both

Communications Ports

- 4 communications types
 - RS-485 full duplex (FD)
 - RS-485 half duplex (HD)
 - 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
- alarm state
- 60 volt max
- 400 mA max

Environmental

Operating temp.....-30° C to +70° C
Storage temp.....-40° C to +85° C
Ingress rating..... IP67

Physical characteristics

Size (LxWxD) excluding connector..... 11.2 x 9.9 x 4 cm
Weight<350 grams
HousingDie-cast aluminum
Lens.....HDPE
Electrical connectorM12, 12 pin
Mounting.....4 x 10-32 UNF

Memory Options

- Internal: 16 MB
- External: Memory stick

Microwave

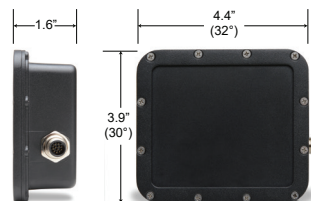
Center frequency24.125 GHz
Frequency range100 MHz
Transmit power100 mW
Beam width.....30° by 32°
F.C.C. Approved. No license required.

Power

Voltage 10 to 45 volts, DC
Current80 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.

Part Number	Description	
200-0880-53	Rear Port RS-232, RS-485 and USB com port	
200-1174-53	Rear Port RS-232, RS-485 and USB com port This sensor is identical to the 200-0880-53 with the exception that this product is intended for embedded use only, where it will be installed inside a protective housing by the end user. CE Approved for embedded use.	
200-0880-54	Side Port USB com port only	
200-0880-56	Rear Port RS-232, RS-485 and USB memory stick port	
200-0880-57	Rear Port RS-232, USB com port, and USB memory stick port	

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.

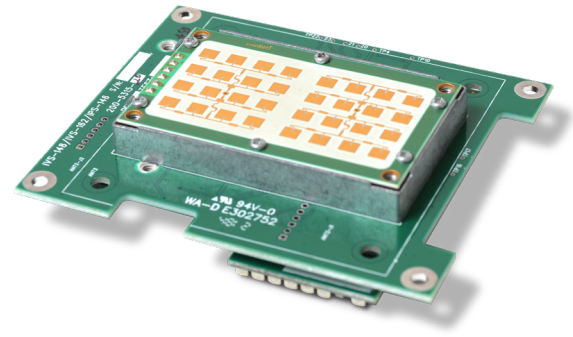
Beginning with the setup, the actual sensor can be configured. Then, the intuitive survey management tools walk the user through calendar setup, location details, speed and time resolutions, vehicle classification, speeds, distances, and more.

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.



FEATURES

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

Performance

Range >400 m
for an average auto

Minimum Speed..... 1.6 km/h

Maximum Speed..... 321.9 km/h

Speed Resolution 0.16km/h

Speed Accuracy..... ±0.8 kph ±0.3%

Directionality selections - Approaching, Receding, Both

Communications Ports

- 4 communications types
 - RS-485 full duplex (FD)
 - RS-485 half duplex (HD)
 -
 - 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
-
- alarm state
- 60 volt max
- 400 mA max

Environmental

Operating temp.....-30° C to +70° C

Storage temp.-40° C to +85° C

Physical characteristics

Size (LxWxD) excluding connector.. 8.43 x 7.01 x 2.79 cm

Weight 90 grams

Mounting..... Mounting holes for

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

-
- 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 T Analyst for data analysis and presentation

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

Part Number	Description	
200-1004-02	Stalker Stationary Statistics Sensor without enclosure	

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

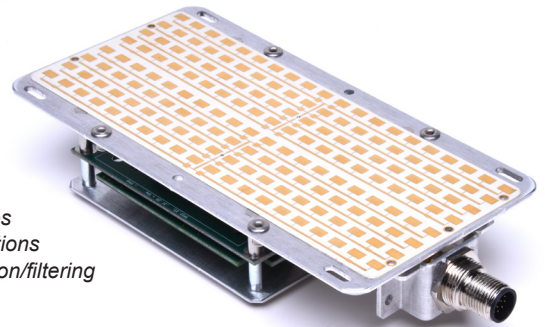
A narrow 6° beam, adjustable beam angle, and open-frame design allow flexible mounting options for OEM developers integrating it into their systems.

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 >400 m
for an average auto
- Minimum Speed..... 1.6 km/h
- Maximum Speed..... 321.9 km/h
- Speed Resolution 0.16km/h
- Speed Accuracy..... ±0.8 kph ±0.3%
- Directionality selections Approaching, Receding, Both

Communications Ports

- 4 communications types
 - RS-485 full duplex (FD)
 - RS-485 half duplex (HD)
 - 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

Speed Alarm Output

- alarm state
- 60 volt max
- 400 mA max

Physical characteristics

- Size (LxWxD) excluding connector... 15.5 x 7.9 x 3.86 cm
- Weight < 226 grams
- Mounting..... slots for flexible OEM mounting

Microwave

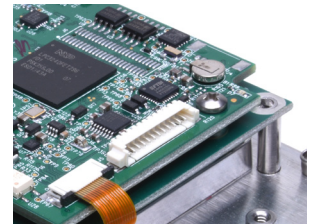
- Center frequency 24.125 GHz
- Frequency range 100 MHz
- Transmit power 200 mW
- Beam width..... 6° by 26°

Power

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

Environmental

- Operating temp..... -30° C to +85° C
- Storage temp..... -40° C to +85° C



12 position, 1.25 mm picoblade connector shown with protective cover plate removed

Part Number	Description	
200-1033-11	Stationary Statistics Sensor with M12 connector	

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 kph to 112 kph 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 >400 m
 for an average auto
 Minimum Speed..... 0.1 km/h
 Maximum Speed..... 112 km/h
 Speed Resolution 0.016 km/h
 Speed Accuracy..... ±0.24 kph ±0.3%
 Directionality selections Approaching, Receding, Both

Part Number	Description	
200-0880-60	Rear Port RS-232, and RS-485	

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 44.72 Hz/km/h




Performance

Range >400 m
 for an average auto
 Minimum Speed..... <1.6 km/h
 Maximum Speed..... 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.

Part Number	Description	
200-1135-50	Rear Port RS-232	

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

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.

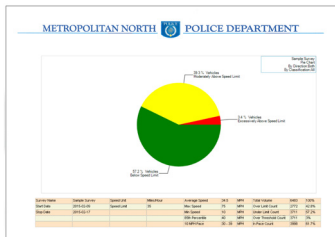
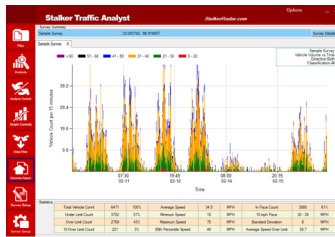
The new Stalker T Analyst is that tool. Updated analysis controls allow the user to import raw data and display it by count vs time, count vs speed, and 85th percentile, just to name a few. Data can be split, graphed,

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

distances, and more.

- Intuitive Survey and Calendar setup
- Powerful Visual analysis controlled by
- Easy report generation
- Compare and toggle between multiple reports
- project folder



Date	Count	Average Speed	Percentile Speed	85th Percentile Speed	Peak Speed
2012-08-10 00:00:00	1	35	45	55	65
2012-08-10 00:05:00	2	38	48	58	68
2012-08-10 00:10:00	3	40	50	60	70
2012-08-10 00:15:00	4	42	52	62	72
2012-08-10 00:20:00	5	45	55	65	75
2012-08-10 00:25:00	6	48	58	68	78
2012-08-10 00:30:00	7	50	60	70	80
2012-08-10 00:35:00	8	52	62	72	82
2012-08-10 00:40:00	9	55	65	75	85
2012-08-10 00:45:00	10	58	68	78	88



Stalker EasyAnalyst

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

EasyAnalyst, Stalker Radar's

by far the easiest to use statistical software package available.

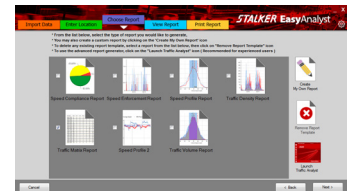
EasyAnalyst imports data directly from all statistics-enabled Stalker trailers, sensors, and signs. There's no data conversion or other complicated computer operation.

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

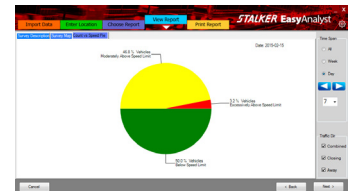
Import your data, enter your location information, and choose your report. It's that simple.

- Speed Compliance Report
- Speed Enforcement Report
-
- T
- T
-
- T

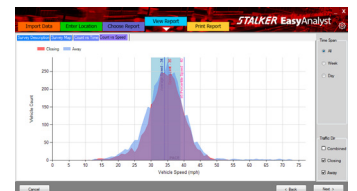
Volume Report



Choose data - report - output. Done!



Date	Count	Average Speed	Percentile Speed	85th Percentile Speed	Peak Speed
2012-08-10 00:00:00	1	35	45	55	65
2012-08-10 00:05:00	2	38	48	58	68
2012-08-10 00:10:00	3	40	50	60	70
2012-08-10 00:15:00	4	42	52	62	72
2012-08-10 00:20:00	5	45	55	65	75
2012-08-10 00:25:00	6	48	58	68	78
2012-08-10 00:30:00	7	50	60	70	80
2012-08-10 00:35:00	8	52	62	72	82
2012-08-10 00:40:00	9	55	65	75	85
2012-08-10 00:45:00	10	58	68	78	88











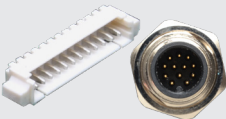
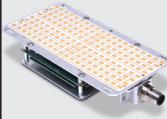








K-Band Sensors

Sensor	Part number	Description	Range	Package(s)
Stationary Statistics Sensor	200-0880-53	Base unit with connector moved to rear.	370 m	831-2298-00 Base* 831-2301-00 with Developer Kit**
	200-1174-53	Base unit with rear connector. embedded use only.	370 m	831-2296-00 Base* 831-2297-00 with Developer Kit**
	200-0880-54	Base unit with external interface replaced with a single USB 2.0 client connection.	370 m	831-2402-00 Base*
	200-0880-56	Base unit with connections for external USB memory stick.	370 m	831-2403-00 Base*
	200-0880-57	Base unit with connections for external USB memory stick and USB 2.0 comm port.	370 m	831-2290-00 Base*
	200-1033-11 with M12 connector	OEM version with 6 x 26 beam width for lane discrimination use.	370 m	831-2405-00 831-2406-00 with M12 connector
	200-1004-02	OEM version of base unit.	370 m	831-2201-00
Low Speed Sensor	200-0880-60	Base unit functionality, for low speed targets. Uses rear connector.	370 m	831-2208-00 Base* 831-2209-00 with Developer Kit**
Hump Yard (Analog) Sensor	200-1135-50	Analog output sensor. See page 6 for description.		835-2211-00 Base

* **Base Packages:** Base packages consist of a sensor

Accuracy.

Developer Kit(s)	I/O Cable	Connector(s)	Tech. Manual	User Manual	Software	
200-1026-21 RS-232 and RS-485 200-1028-21 USB	155-2360-01 RS-232 and RS-485 155-2357-01 USB		011-0131-00	011-0131-01 (Speed Sensor) 011-0132-00 (T) 011-0146-00 (App)	Stalker T Statistics App 200-0973-00 & Dashboard 200-0972-00	
200-1026-21 RS-232 and RS-485 200-1028-21 USB	155-2360-01 RS-232 and RS-485 155-2357-01 USB		011-0131-00	011-0131-01 (Speed Sensor) 011-0132-00 (T) 011-0146-00 (App)	Stalker T Statistics App 200-0973-00 & Dashboard 200-0972-00	
200-1028-21 USB	015-0610-03 USB 155-2519-02 USB (waterproof)		011-0131-00	011-0131-01 (Speed Sensor) 011-0132-00 (T) 011-0146-00 (App)	Stalker T Statistics App 200-0973-00 & Dashboard 200-0972-00	
200-1026-21	155-2357-01 USB		011-0131-00	011-0131-01 (Speed Sensor) 011-0132-00 (T) 011-0146-00 (App)	Stalker T Statistics App 200-0973-00 & Dashboard 200-0972-00	
200-1026-21	155-2463-01 USB		011-0131-00	011-0131-01 (Speed Sensor) 011-0132-00 (T) 011-0146-00 (App)	Stalker T Statistics App 200-0973-00 & Dashboard 200-0972-00	
200-1026-21	155-2461-00 155-2360-01 (M12) 155-2445-00		011-0131-00	011-0131-01 (Speed Sensor) 011-0132-00 (T) 011-0146-00 (App)	Stalker T Statistics App 200-0973-00 & Dashboard 200-0972-00	
N/A	155-2461-00 155-2445-00		011-0131-00	011-0131-01 (Speed Sensor) 011-0132-00 (T) 011-0146-00 (App)	Stalker T Statistics App 200-0973-00 & Dashboard 200-0972-00	
200-1026-01	155-2360-01 RS-232 and RS-485 Power/serial data adapter		011-0131-00	011-0131-01	Dashboard 200-0972-00	
N/A	026-0056-01 (right angle)		011-0223-00	011-0223-00	Special order	

** Packages with Developer Kits: Packages with Developer Kits consist of sensor, Developer Kit (see page 17 for more information), 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 3 km 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

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



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: -30° C to +70° C, 90% relative humidity, Non-operating: -40° C to +85° C
Mechanical:	Weight – 0.52 kg Diameter – 6.7 cm Length – 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
Auto Self-Test:	Performed every 10 minutes while transmitting
Stationary Speed Range:	Stationary low speed threshold configurable: 1.6 to 321 km/h 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/cm ² maximum at 5 cm from lens

Control and Configuration Settings

	Transmitter Control Zone Unit of Measure Unit Resolution Faster Target Tracking
Serial Port	Baud Rate Output Format Leading Zero Character Format D Direction Character Enable (RS-232) Zeros After Target (RS-232) Message Period Format D Update on Change Only (RS-232) Format D Zero Report (RS-232) Polled Modes D0-D4 (RS-232)
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)

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

Stalker Traffic Speed Sensor

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



FEATURES

- Longest range on the market - up to 3 km for standard vehicle
 - Simultaneous closing/away operation available in stationary mode
 - Strongest and faster target detection in all modes
 - True Doppler audio output
 - Strongest and faster speed locking
 - RS-232 serial interface supporting baud rates up to 38400
- Selectable output protocols and data formats

General Specifications

Type:	Moving/Stationary Doppler Radar Speed Sensor
Operating Frequency:	34.7 GHz (Ka-Band)
Stability:	±100 MHz
Communication:	RS-232
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:-30° C to +70° C, 90% relative humidity, Non-operating:-40° C to +85° C
Mechanical:	Weight – 0.52 kg Diameter – 6.7 cm Length – 11.8 cm Case Material – Aluminum die cast
Accuracy:	+1, -2 mph stationary, +2, -3 mph moving +1, -2 km/h stationary, +2, -3 km/h moving
Audio Output:	A 3.3Vpp pulse-width modulated (PWM) audio
Auto Self-Test:	Performed every 10 minutes while transmitting
Stationary Speed Range:	Stationary low speed threshold configurable: 8 to 321 km/h 19 to 321 km/h
Moving Speed Range:	Patrol speed – Low patrol acquisition threshold configurable: <i>Standard</i> acquisition of 8 to 144 km/h, when Patrol Lo Cutoff = Low Optional acquisition of 32 to 144 km/h, when Patrol Lo Cutoff = High Patrol speed, once acquired, will track to 320 km/h Opposite lane target speed - 321 kph Max combined closing speed For 8 km/h patrol speed: 32 to 313 km/h For 112 km/h patrol speed: 56 to 209 km/h Same lane target speed – Related to patrol speed: ±70% of patrol speed within 8 km/h of patrol speed i.e. For 80 km/h: 25→72 km/h and 88→136 km/h Same lane patrol speed must be greater than 25 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/cm ² maximum at 5 cm from lens

Control and Configuration Settings

	Transmitter Control Mode Zone Unit of Measure Unit Resolution Faster Target Tracking
Serial Port	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.

Pro II Speed Sensor

Powerful, feature-loaded for use in scoreboards, facilities, and other Sports Speed Measurement applications

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

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, 90% relative humidity
Storage Temperatures	-40°C to +85°C

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 15 mW nominal 25 mW maximum
Power Density	1 mW/cm ² maximum at 5 cm from lens

The Federal Communications Commission requires that all transmitting equipment carry a Grant of Type Acceptance. The Stalker Speed Sensors comply with Part 90 of the FCC rules and are Type Accepted by the FCC under Type Acceptance number IBQACMI002. The FCC also requires that an operating license be obtained by the user of the equipment.

Electrical Specifications

Supply Voltage	9 – 24 VDC
Current (at 12 VDC nominal)	Transmitter On: 390 mA Transmitter Off: 138 mA

Performance Specifications

Speed Range	Max target speed: 1280+ KPH Min target speed: < 1 KPH
Accuracy	+/- 0.3% In ones resolution, speeds are rounded to nearest integer. In tenths resolution, speeds are rounded to nearest tenth.
Maximum Clocking Distance	15 metres for baseballs 2.8 km for an average auto
Audio Output	Raw 3.3 V analog audio output signal is provided 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	0.52 kg
Diameter	6.7 cm
Length	11.8 cm
Case Material	Aluminum die cast

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 waterflow management.

FEATURES

- User adjustable tilt compensation adjusts speed reading based on angle to target
- Measures: meters/second, feet/second, miles per hour, and kilometers per hour
- Digital Signal Processing
- Senses flow direction - moving away, closing, or both directions
- 4 levels of sensitivity

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 kph to over 65 kph – 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

Type:	Surface Velocity Radar Sensor
Operating Frequency:	34.7 GHz (Ka-Band)
Stability:	± 100 MHz
Power Requirements:	Voltage: 9 - 24 VDC Current: (at 12 VDC nominal) Transmitter on: 470 mA Transmitter off: 100 mA
Environmental	Operating: -30° C to $+70^{\circ}$ C, 90% relative humidity, Non-operating: -40° C to $+85^{\circ}$ C
Mechanical:	Weight – 0.52 kg Diameter – 6.7 cm Length – 11.8 cm Case Material – Aluminum die cast
Accuracy:	± 0.1 m/s
Auto Self-Test:	Performed every 10 minutes while transmitting
Speed Range:	0.2 m/s to 18 m/s

Microwave Specifications

Antenna:	Conical horn
Polarization:	Circular
3DB Beamwidth:	$12^{\circ} \pm 1^{\circ}$
RF Source:	Gunn-Effect diode
Receiver Type:	Two direct-conversion homodyne receivers using four low-noise Schottky barrier mixer diodes
Power Output:	20 mW minimum 25 mW nominal 50 mW maximum
Power Density:	2 mW/cm ² maximum at 5 cm from lens

Factory Configuration (defaults in Bold)

Serial Port Baud Rate	9600
Communications Protocol	RS-232 or RS-485 - build option

Field Configuration (defaults in Bold)

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

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

Ka-Band Sensors

Sensor	Part number	Description	Range	Package(s)
Stalker Pro II Speed Sensor	200-0853-00 RS-232 200-0854-00 RS-485	Ka-Band - Scoreboards, Tennis facilities. Directional - tracks a wide variety of objects including baseballs, vehicles, tennis balls, and hockey pucks. PC application	2.81 km	818-1001-00 RS-232 with Developer Kit** 818-1002-00 RS-485 with Developer Kit**
Stalker Traffic Speed Sensor	200-0644-00	Ka-Band - For speed sensing application requiring the monitoring of target speed in a mobile environment. Direction sensing, with both moving and stationary capabilities.	2.81 km	818-2410-00 RS-232 Base* 818-2411-00 RS-232 with Developer Kit**
Stalker Stationary Speed Sensor	200-0644-01 RS-232 200-0679-01 RS-485 200-0644-50 RS-232 (right angle connector)	Ka-Band - For measuring speed rail crossing safety, rail yard operations.	2.81 km	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**
Stalker Surface Velocity Sensor	200-0814-00 RS-232 200-0914-00 RS-485	Ka-Band - Tilt compensation and DSP, combined with direction sensitivity, horizontal angle adjustment, and 4 levels measurement applications.		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**

* **Base Packages:** Base packages consist of a sensor

Accuracy.

Developer Kit(s)	I/O Cable	Connector(s)	User Manual	Software	
200-0863-00 RS-232 200-0864-00 RS-485	155-2223-00 RS-232 155-2239-02 RS-485		011-0116-00	Scoreboard App 200-0865-00	
200-0702-00 RS-232	155-2223-00		011-0110-00	Dashboard 200-0707-00	
200-0702-00 RS-232 200-0730-00 RS-485	155-2223-00 RS-232 155-2239-02 RS-485		011-0110-00	Dashboard 200-0707-00	
N/A	155-2223-00 RS-232 155-2239-02 RS-485		011-0105-00	N/A	

**** Packages with Developer Kits:** Packages with Developer Kits consist of sensor, Developer Kit (see page 16 for more information), Accuracy.

Developer Kits

Stalker Sensor Developer Kits

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.

separately. For example, in some cases, once the sensor is

Interface Box is no longer necessary.

Overall, the purpose of the Stalker Developer Kit:

-
- 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 (3.6 m) (155-2223-00)
- Application (with Config files)
- Serial cable (3 m) (155-2130-00)
- USB-to-Serial Port (DB9) Adapter (015-0196-00)



200-0702-00
(RS-232)

(Sensors not included in Developer Kits)

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 (25 m) (155-2239-02)
- Application (with Config files)
- Serial cable (3 m) (155-2130-00)
- USB-to-Serial (DB9) Port Adapter (015-0196-00)



200-0730-00
(RS-485)



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 (3 m) (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 (3 m) (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

using saved settings for quick and easy duplication.



STALKER[®]

Power to Enforce.

Ballinger Technology Pty Ltd

Unit 20, 23 Heyington Avenue Thomastown 3074 Victoria
Ph: (03) 9386 8722 Email: sales@ballingertech.com.au



006-0561-00 Rev G