

One Year Warranty

This product is warranted to be free of manufacturing defects for a 1-year period from the original consumer date of purchase. The warranty does not include damage to the product resulting from accident, misuse, improper installation, operation, or unauthorized repair or alteration. Opening the product case will void this warranty. If the product should become defective within the warranty period, Sports Radar Ltd., will repair or replace it at our option, free of charge. You should fill out and return the enclosed registration form to ensure warranty coverage. Without a completed registration form on file we will require proof of date purchased. Please contact Sports Radar prior to shipping a return.

Shipping returns are at purchaser's cost. Return shipping to purchaser will be at Sports Radar Ltd.'s cost inside the 48 continental United States, international shipping is the sole responsibility of the purchaser.

The consumer's remedy is the repair or replacement as is expressly provided above. This warranty gives you specific rights. You may also have other rights, which vary, from state to state.

Manufactured by Sports Radar, Ltd. in the U.S.A.

Sports Radar Ltd.

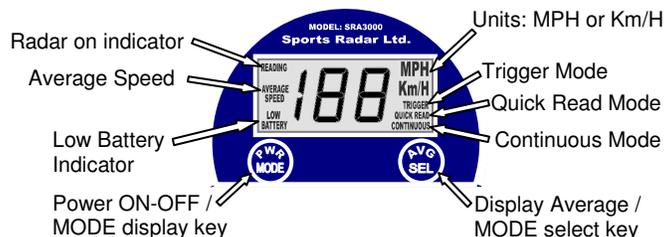
INSTRUCTION MANUAL Tracer Pro Radar Gun



SPECIFICATIONS

Mechanical: length 6.5"; width 3.2"; height 7.5"; weight 1 lb.
Display Type: 2-1/2 digits LCD (will display up to 199)
Accuracy / resolution: 3% / 1 MPH or 1 Km/H
Speed Units: Miles Per Hour (MPH) or Kilometers per Hour (Km/H)
Speed Range: 3 to 199 (MPH or Km/H)
Reading Distance: Up to 130 feet (baseballs with Filter F1 setting)
Power: 6 standard AAA (alkaline type recommended)
Typ. Battery Life: 20 hours (continuous), 65 hours typical (trigger)
Operating Temperature 30-105 degrees F
Storage Temperature 20-125 degrees F (excluding batteries)

Speed Display up to 199 MPH or Km/H



USER BUTTONS in DETAIL

PWR/MODE The PWR/MODE key has 3 functions:

- 1 POWER ON or OFF:** Press and release to power up. Press and hold about 3 seconds to turn power off.
- 2 MPH or KMH:** Pulling the trigger, when powering up will set the units to Km/h. The default units (without the trigger pulled) is MPH.
- 3 MODE SELECTION:** Press when powered up will display the user options. Each press of the PWR/MODE key will display the next option which can be selected with AVG/SEL key as described below.

AVG/SEL The AVG/SEL key has 2 functions, displaying the average speed, and selecting an operating mode or user option.

- **AVG (average and highest speeds):** Press and hold the AVG/SEL key down: the AVERAGE SPEED will display, then HI then the highest speed will display. Will repeat AVG, Highest as long as the key is pressed.
- **SEL (select the user options):** Pressing AVG/SEL key *after pressing the PWR/MODE key* will select the user options described below.

USER OPTIONS SELECT

TRIGGER or CONTINUOUS Press PWR/MODE button once, the alternate option, TRIGGER or CONTINUOUS is displayed. Press the AVG/SEL button to select it, or press PWR/MODE to move to the next option.

Trigger mode will register a speed when the trigger is pulled. Release the trigger when a speed is displayed. Note that the speed may be displayed *after* the trigger release, see REGISTERING A SPEED on page 6 for additional information.

Continuous mode speeds are registered without the need to pull the trigger. This is the "hands free" mode, typically used with tripod mounting. This mode allows a single user to pitch (or hit balls into a net) and get the speed of every ball. In the continuous mode, the Tracer will have a "pitch back" delay of 3 seconds after a reading before another speed can be recorded (unless the QUICK READ mode is selected).

NOISE FILTER SETTING: To reduce or eliminate undesired readings, the Tracer has a user adjustable noise filter with 3 settings: F1, F2 and F3. F1 (default) is the least noise filtering and provides maximum range.

F2 is medium filtering that reduces range about 50%

F3 is maximum noise filtering for short range (30 feet) noisy environments.

There are 2 ways to select the Filter number:

1. Press PWR/MODE key two times, the current Filter number will be displayed. Press the AVG/SEL button to increase the filter number.
2. In the Continuous mode, you can pull the trigger, display will show the current filter number, then advance to the new filter number.

QUICK READ: Quick read allows the Tracer to acquire and display speeds quickly, about 3 speeds per second. To select the Quick read, use Continuous mode and press the PWR/MODE key *three* times, the QUICK READ icon is displayed, press the AVG/SEL button. To exit quick read, just repeat above. Quick read only works in the Continuous mode as Trigger mode can display as fast as you pull the trigger.

BEEPER ON or OFF: The Tracer has an audible beeper that sounds when a speed is registered, and is enabled as default on power up. To disable (or re-enable) the beeper, press the PWR/MODE button *four* times, the beeper will sound, press the AVG/SEL button. If the beeper was enabled (beeped when a speed is registered), it will now be disabled. Likewise, if the beeper was disabled, it will now be enabled.

Caution Please read the following before using the Tracer Pro Radar gun. To prevent personal injury or death Stay clear of all roadways and maintain a safe distance from targets. Use protective wear when appropriate. Turn off the Tracer Pro in areas designated or posted as prohibiting cell phones or radio frequency devices. Always obey signs regarding radio frequency devices. In addition to powering off, do not remove or install batteries in areas exposed to any potential explosive gasses because making and breaking the battery contact can cause sparking that could ignite the gasses. Keep at least 6 inches away from pacemakers to avoid any interference as recommended by the Health Industry Manufacturers Association.

C o n g r a t u l a t i o n s

On your purchase of the Sports Radar *Tracer* radar gun, a precision training instrument designed to provide years of service. Made in the USA, the *Tracer* will track the speed of almost anything that moves. This manual will guide you to insure optimal performance and satisfaction using your *Tracer* radar gun.

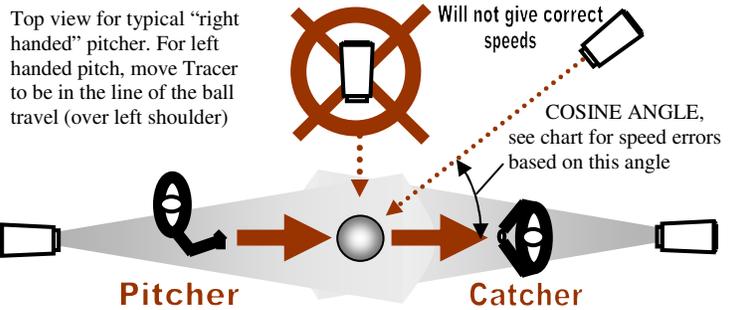
INTRODUCTION:

The Sports Radar *Tracer* Pro radar gun is a microprocessor based computing device that uses a low power doppler radar transceiver. The radar gun sends out a signal, which bounces off the object you are tracking and is reflected back to the radar gun. A mixer provides the difference in the frequencies of the original sent signal and the reflected signal that bounced off the object. From this difference signal, which is proportional to the speed of the object, a microprocessor calculates speed and displays it in miles per hour (MPH) or kilometers per hour (Km/H).

If you have any questions or experience any difficulty operating your Sports Radar product, contact Sports Radar Ltd directly.

All warranty information is located at our offices, therefore it is important that you contact us, not your retailer. Sports Radar products are thoroughly tested and inspected prior to shipment, and most issues can be resolved with a phone call. However mishaps do occur, so be sure to fill out and return the warranty card, as any product return is subject to verification of proper return authorization. Information and authorization number may be obtained by writing or calling our offices, or log on to www.sportsradargun.com and fill out an RMA request.

 **Sports Radar Ltd.**
7397 S. Suncoast Blvd.
Homosassa, Florida, 34446
352-503-6825
 <http://www.sportsradargun.com>
 **Email: Info@sportsradargun.com**



Best Performance is achieved when target is moving in the direct line of the radar gun. Target can be either coming towards or moving away from the Tracer Radar gun

COSINE ERROR CHART: The speed registered by the radar gun will be less than the actual speed by the cosine of the angle depicted above.

Cosine angle	Cosine factor	Cosine angle	Cosine factor
5 degrees	0.996	30 degrees	0.866
10 degrees	0.985	35 degrees	0.819
15 degrees	0.966	40 degrees*	0.766
20 degrees	0.940	45 degrees	0.707
25 degrees	0.906	50 degrees	0.642

* This is the approximate cosine angle depicted, an actual target speed of 100MPH would be displayed as 77MPH.

FCC ID JPFSRA3000

This device complies with FCC part 15 rules. Operation of this device is subject to the following 2 conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference that may cause undesired operation.

2 7

REGISTERING A SPEED

To take a reading in the **trigger mode**, point the Tracer in the line of the target travel and squeeze the trigger, the READING indicator displays and the display blanks. When a speed is displayed, release the trigger. Note that a speed may be displayed *after* trigger release. This happens when a qualified speed has been recorded but the target speed is increasing and still being tracked. An increasing speed can be caused by a decreasing cosine error which is typical when the target is moving away. The displayed speed will remain in the display until the trigger is again pulled. If a speed was not recorded when the trigger is released, the display will show "0". In the **continuous mode**, the Tracer will automatically take a reading and display the speed when a target is present. After a reading is taken the Tracer will not take another reading for about 3 seconds, unless in the Quick Read mode, which can display about 3 speeds per second.

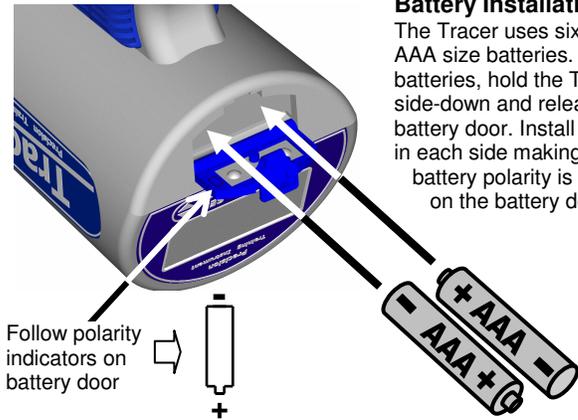
TIPS on USING THE TRACER

The Tracer will register the speed of almost anything that is moving at a uniform speed within range. The target can be either moving towards, or away from the Tracer. For best accuracy the target should be traveling directly towards or away from the gun. See Best Performance on page 7 for errors due to the Cosine angle from this direct line of target travel.

Range is mostly dependant on the size, shape and material of the target. In general, large solid objects like an automobile will have a range over 1500 feet, and small objects like a baseball have a range of up to 130 feet (with F1 filter setting).

Undesired readings There are many causes of undesired readings (called NOISE), and understanding what the radar interprets as a speed will help you avoid undesired readings. Anything that moves or vibrates can be noise to the Doppler radar. If the noise is constant, for a minimal period of time, the Tracer *will* display an associated speed. Noise sources include: Automobile passing in the background, a runner between bases, a fan blade spinning, a motor turning, a power pole transformer vibrating, a fluorescent light or a computer monitor. Out-doors is typically a lower noise environment, in-doors typically has more noise sources. In general, if you can see it moving or hear it vibrate the radar can detect it. You may be able to locate the source, reposition the source or the radar gun and eliminate the problem. In addition, you can use the Noise Filter setting at a tradeoff with range as described on page 5.

GETTING STARTED



Battery Installation:

The Tracer uses six standard AAA size batteries. To install batteries, hold the Tracer up-side-down and release the battery door. Install 3 batteries in each side making sure the battery polarity is as shown on the battery door.

NOTE: If a battery is inserted in reverse polarity the battery life will appear to be short. Therefore if the low battery indicator turns on prematurely, you can remove the batteries and re-install making sure the polarity is correct. If 2 batteries are reversed, the power will not turn on.

QUICK START

With batteries installed, power up by pressing the PWR/MODE button, the beeper will sound and display shows 0. The power up default modes are MPH and Trigger mode (the MPH and TRIGGER indicators are on). If you want Km/h, hold the trigger down and power up. You are ready to take a speed reading, just point at the target and pull the trigger! To turn the Tracer off, press and hold the PWR/MODE button for about 3 seconds, when the display starts counting down, you can release the button. The Tracer has an auto shut down feature that will automatically shut the radar gun off in about 15 minutes if not used.

6 3