

TORO. Count on it.

Turf Guard®

Wireless Soil Monitoring System

Sensors

The Turf Guard Wireless Soil Monitoring System. Get the essential soil information you need, when you need it. Stay up to date on your current soil moisture, salinity, and temperature conditions no matter where you are. Sensors are quick and easy to install and are completely buried beneath the surface of your turf. Turf Guard gets you the information you need to make important decisions in real time.

PROTECT YOUR TURF

- Monitor moisture levels and adjust irrigation
- Track daily soil temperatures
- Monitor salt build-up and schedule flushing

EASY TO INSTALL

- Wireless connectivity allows for quick setup
- Requires less than 5 minutes per location
- Immediately ready for play after installation

EASY TO USE

- Simple Web interface
- Accessible from any Internet-connected device
- Stand-alone software version also available



"I've been using moisture-sensing technology for 5-6 years, and this is by far the highest-tech unit you can get on the market. It's so simple and so valuable..."

**– Amy Fouty, CSFM
Athletic Turf Manager
Michigan State University**

Challenges of Sports Turf Maintenance

As a sports field manager, you face unique challenges and needs in terms of landscape maintenance:

Appearance: Whether or not the game is nationally televised, the field has to look its best when game day comes around.

Playability: Your team won't play its best if the field is not at its best and maximizing player safety is paramount.

Efficiency: Your fields experience high usage and you have minimal time for them to recover, making it all that more important to care for them as efficiently as possible.

Water Use: The need to conserve water affects us all, even professional sports fields – Maintaining the field while minimizing water use and costs is a home run.

Toro has long supported the efforts of sports field managers, from our sponsorship of the Sports Turf Management Association, to development of maintenance equipment designed for the unique needs of your field surfaces. Now, our irrigation solutions take it to the next level with an innovative technology that will make the task of meeting the demands of sports field maintenance a lot easier: The Turf Guard® Wireless Soil Monitoring System.

What Is Turf Guard?

Toro® Turf Guard Wireless Soil Monitoring System is a revolutionary technology that helps you improve your turf, soil, and water efficiency. The Turf Guard system lets you know what's going on beneath the surface of your sports field so you can make timely, well-informed adjustments.

Installation is quick and easy without any wires or trenches; players will never know the sensors are there. Once in the ground, each sensor accurately measures moisture, temperature and salinity levels of your soil at two depths, in real time. That data is then collected and compiled into simple, easy-to-read tables, graphs, and dashboards. This information can then be accessed from any Internet-connected computer by accessing the system's Web-based interface – you can even access your sensor information from a Web-enabled cell phone.



Sensor

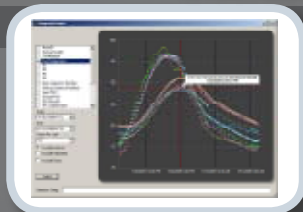
- Measures soil moisture, temperature, and salinity
- Two distinct depths in the soil profile—Critical root zone level and a second 4.5 inches lower
- Field-replaceable battery with 3 year expected life
- Durable housing is resistant to aeration damage

Repeater

- Increases the allowable distance between sensors and the base station
- Multiple sensors can be run through just one repeater, no configuration required
- Can run off of a standard 120v outlet
- Installs within 500 feet of the sensor(s) and within 5,000 feet of the base station

Base Station

- Connects to Internet in the office
- Plugs into standard 120v outlet
- Installs within 500 feet of the sensor(s) or within 5,000 feet of the repeater(s).



SiteVision™ Interface

- Easy-to-read graphical interface
- Displays sensor data in real time
- Track historical data
- Compare readings from multiple sensors side-by-side

Six Ways Turf Guard Helps You Manage Your Turf

Turf Guard can help you more easily meet the daily challenges you face, but don't take our word for it – hear what other sports field managers are saying about the most advanced soil sensor system on the market!

1. Promote healthier turf. Proper agronomy leads to healthy, vibrant turf.

“With Turf Guard, we’re creating a healthier plant. It’s giving me more information and giving me a better playing surface. The Turf Guard data tells me how the plant wears, how it recovers. It helps me get a healthier playing surface for the athlete.”

Will S.
Turf Superintendent
College & University

2. Optimize Playing Conditions and Protect the Players. Firm turf plays consistent and fast, soggy turf is slow and can lead to ankle/knee injuries. Turf Guard's trend analysis makes sure that the field reaches optimal playing conditions for major events. Help improve your team's home field advantage by having consistent playing conditions.

“Throughout the year I would be able to tell when the turf played better in one game than in another game. I would get some baseline numbers as far as what moisture level I wanted to play the game at. I was looking for specific information with the moisture. I felt like I could keep the field at a little more optimum range with the sensors in place.”

Mike A., CSFM
Facilities and Grounds Manager
College & University

3. Track Salinity Build-up. High salt levels can weaken the turf and reduce turf visual quality and playing quality and introduce disease pressures.

4. Reduce/Ration water usage. Water usage in sports turf can often be reduced by 20-30% without any visible change to turf quality or health. Stretching irrigation cycles can result in improved rooting depth and turf vitality.

“Water is a critical issue. It’s becoming real critical here in Florida, and [Turf Guard] is another way that if there’s any question about how we irrigate or operate, it would show we’re doing everything we can to reduce the impact on the aquifer in Florida ... It’s a good tool.”

Rob J.
Turf Manager
Professional Football

5. Protect the Turf. Significant turf damage occurs when turf is played on when it is too soft or soggy. Turf Guard can be used to set “Field Closed” thresholds.

6. Increase Your Productivity. By centrally collecting vital information, Turf Guard allows the grounds manager to be more efficient. Know where the trouble spots lie before leaving your office.

“You can optimize fertility applications based on the data [the Turf Guard sensors] provide. I absolutely love them, I really do. It makes my job easier.”

Amy F., CSFM
Athletic Turf Manager
College & University





Sports Field Solutions

About Toro

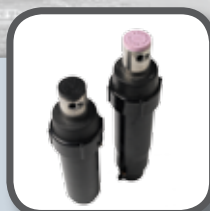
Since 1914, The Toro Company has transformed the way professionals and homeowners care for their outdoor environments. Through the decades, Toro has become a global leader in turf maintenance equipment and precision irrigation systems, serving customers from golf course superintendents, grounds and sports field managers to landscape and irrigation contractors, agricultural growers, and homeowners.

Toro offers a complete line of professional products that work together to provide optimal water-management solutions for all your irrigation needs. We want to help you make your turf the best it can be – that’s why Toro is committed to developing advanced and improved products that water more accurately, more efficiently, more dependably, and more affordably.

Sports Field And Artificial Turf Sprinklers:



TR70XT Series (30'-68')
Designed for the durability and exacting needs of sports fields or large turf installations. Trjectory™ adjustment allows fine-tuning of trajectory to overcome obstacles or combat wind. Below-grade mounting minimizes in-field obstacles.



640 Series (47'-67')
Considered the most durable, heavy-duty commercial sprinkler available, the 640 Series is the proven veteran for athletic fields, parks, campuses and commercial sites. Can be installed 1/2" below grade allowing only a small exposed surface area for added safety.



TS90 Series (53'-95')
The TS90 series sprinkler combines great Toro patented & exclusive innovations like Trjectory and a ratcheting riser with a 53-95' radius. With its rugged body design, rubber cover, and small exposed surface diameter, these sprinklers are perfect for every sports field application.



TG101 (91'-178')
The TG101-NPT large-radius, gun-style sprinkler is ideal for applications that require long distance throw, such as irrigation solely from the perimeter of sports fields, or for cleaning and cooling artificial turf.



DL2000® Dripline
Drip is one of the most efficient methods of irrigation – Almost 20% more efficient than traditional sprinklers. Drip systems apply water only to the area in need of water, eliminating run off and the effects of wind.



P-220 Valves w/ Pressure Regulation
Excessive pressure results in misting, and increase in flow with decrease in useable precipitation. Adjusting to recommended operating pressures can result in 30-40% reduction in water use, or more depending on system pressure.

Sports Field Management Solutions:

Sentinel® Central Control

Sentinel Central Control is a powerful system that literally “Stands Guard” over large irrigation sites. With ET-adjustment, monitoring for and isolation of leaks and breaks, and the ability to control up to 999 controllers from a central computer, users have a water management tool that provides reliability, accuracy and water savings.



TriComm™ System

The Toro TriComm System is a remote site management tool for irrigation systems that allows a manager to program, manually operate, and monitor a controller’s operation – all via the Web. All communication is conducted using an internet-based control interface over an advanced cellular network.