



Sentinel® Central Control

Central Control

Sentinel Central Control from Toro® is a powerful system that literally "stands guard" over large irrigation sites. With the ability to control up to 999 field satellites from one location, users have a water management tool that provides reliability, accuracy and water savings.

Features & Benefits

Simple To Use

Microsoft® Windows-based software – daily operations and scheduling are made quick and easy.

Features For Water Management

ET-based watering, flow sensing and optimization, water usage report with historical comparison.

Smartphone and Tablet Connectivity

The new Sentinel WMS software package also includes iPhone® and iPad® connectivity for remote programming and alerts on ALL new systems.

Multiple Communication Options

Communication options like radio, telephone, fiber optics cellular, and Ethernet can be mixed and matched to meet system requirements.

Distributed Programming

Stores irrigation programs in the computer while allowing irrigation control at the satellite level, ensuring the loss of a component does not result in the loss of irrigation across the system.

Toro NSN® Support

All centrals come with a minimum of two years of NSN support – unlimited 24-hour toll-free support with 24/7/365 emergency paging

Three Choices Of Central Packages

- 1) Software only;
- 2) Software and radio communication interface;
- 3) Central computer, software and radio communication interface.



iPhone® and iPad® Connectivity



Turf
Guard®
Option



ET Adjust



Sentinel® Central Control

Toro® Sentinel field satellites are commercial grade, modular units that do the irrigation control work in the field, designed to operate in both stand-alone and central mode.

NEW!



The newly-redesigned satellite controller offers a number of new features and enhancements, including a completely-redesigned interface for easier standalone programming that incorporates a large backlit graphical display, new shortcut buttons for frequently-used functions, as well as a number of other additions.

Features & Benefits

Flow Sensing

Reads, displays and reacts to under and over flow situations and track water usage. No additional circuit boards are required.

Expanded Wireless Connectivity

Sentinel offers true two-way communication via several different connectivity options that can be mixed and matched to meet system requirements.

Firmware Updating

Firmware is now easier than ever to update or upgrade by simply inserting a USB thumb drive.

Weather-Based Irrigation

Sentinel waters according to ET values by using one or a number of onsite weather stations.

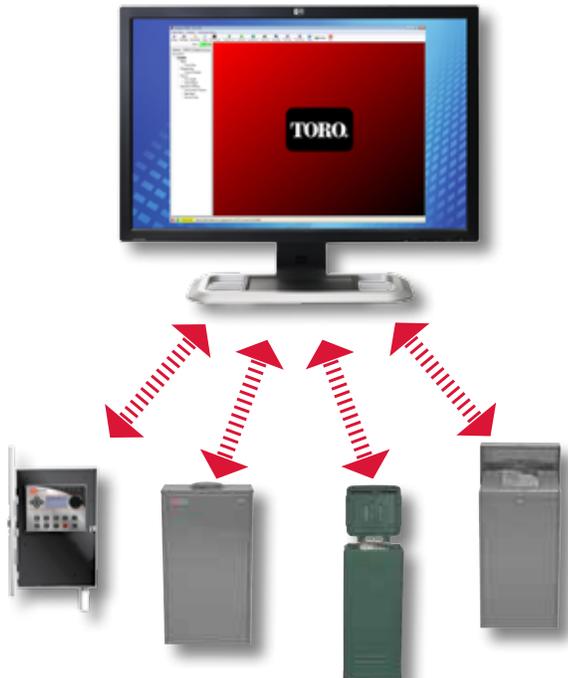
Advanced Troubleshooting

The new satellite controller has significantly more internal memory, allowing for extensive event logging and data storage, making it easier to diagnose issues in the field.

Water Management Highlight



The new satellite controller can easily be upgraded to operate with Turf Guard® wireless soil sensors, communicating directly with up to 16 sensors per controller (1 per program), continually measuring moisture, temperature and salinity levels in the soil, and adjusting irrigation as needed.



Specifying Information—Sentinel

TS-X-XX-XXX-XX

Configuration	Station	Enclosure	Communication
TS-X	XX	XXX	XX
TS—Toro Sentinel Satellite Assembly TSW—Toro Sentinel Satellite Assembly, Wireless Output	12—12-station 24—24-station 36—36-station 48—48-station	WS1—Powder-coated Wall Mount (Small) WS5—Stainless Steel Wall Mount (Large) PP1—Plastic Pedestal Mount (Large) PS1—Stainless Steel Pedestal Mount (Large)	NR—No Radio U2—UHF 2-Way Radio for Communication to Central and Handheld

Example: A 24-station Sentinel satellite in a powder-coated wall-mount cabinet and without the optional pre-installed UHF radio would be specified as: **TS24WS3NR**

Sentinel Two-Wire Controllers



Small Metal
Wall Mount

Stainless Steel
Wall Mount

Stainless Steel
Pedestal

Plastic
Pedestal

Specifying Information

TSD-XXX-XX		
Station Count	Enclosure	Communication
TSD	XXX	XX
TSD—Toro Sentinel Satellite Assembly, Two-Wire (Decoder)	WS2—Small Painted Cabinet WS4—Medium SS Cabinet WS5—SS Wall Mount PS1—SS Pedestal	NR—No Radio U2—UHF 2-Way Radio for Communication to Central and Handheld
Example: A two-wire Sentinel satellite in a stainless steel wall-mount cabinet would be specified as: TSDWS2NR		

Decoders and Surge Protectors



Specifying Information— Flow Sensors

Model	Description
CDEC-ISP-1	Single Station Decoder
CDEC-ISP-2	Two Station Decoder

Specifying Information— Flow Sensors

Model	Description
DEC-SG-LINE	Decoder, Line Surge Protector

Accessories



Specifying Information— TWRFS

Model	Description
TWRFS	Toro Wireless Rain/Freeze Sensor

Specifying Information— SHHR

Model	Description
SHHR	Sentinel Hand Held Remote

Specifying Information— Flow Sensors



Model	Description
TFS-050	1/2", Sch-40, PVC-Tee Flow Sensor
TFS-075	3/4", Sch-40, PVC-Tee Flow Sensor
TFS-100	1", Sch-40, PVC-Tee Flow Sensor
TFS-150	1.5", Sch-80, PVC-Tee Flow Sensor
TFS-200	2", Sch-80, PVC-Tee Flow Sensor
TFS-300	3", Sch-80, PVC-Tee Flow Sensor
TFS-400	4", Sch-80, PVC-Tee Flow Sensor

TPV Valves with Pre-Installed Latching Solenoid



Specifying Information— TPV Valve w/ Latching Solenoid

Model	Description
TPVF100DC	1" Fx F, NPT, w/FC and DC Latching Solenoid
TPVF100SDC	1" Sx S, w/FC and Glue Stop™ and DC Latching Solenoid
TPVF100MBDC	1" Male x Barb, w/FC and DC Latching Solenoid
TPVF100MMDC	1" Male x Male, w/FC and DC Latching Solenoid

P-220 Valves with Pre-Installed Latching Solenoid



Specifying Information— P220 Valve w/ Latching Solenoid

Model	Description
P220-26-94	1", Electric, In-line, Angle and DCLS-P
P220-26-96	1 1/2", Electric, In-line, Angle and DCLS-P
P220-26-98	2", Electric, In-line, Angle and DCLS-P
P220-26-90	3", Electric, In-line, Angle and DCLS-P
DCLS-P	Potted Latching Solenoid

Controller

Specifications and Features

- 16 programs
- Eight start times per program
- 6-week scheduling calendar
- Station runtimes from one minute to 4 hours and 15 minutes
- Global adjustment from 0-255%
- Flow sensor ready
- Handheld remote ready
- Turf Guard ready
- Two sensor inputs included for rain sensors or other switch sensors
- Ability to connect to a laptop to download large station count programs
- Upgrade to a central computer system without additional field satellite hardware or costs
- Program single or multiple stations to operate sequentially or start a program or multiple programs with just a few keystrokes
- Ability to read open- or closed-contact switches in any station count configuration
- Current monitor will disable a station if excessive amp draw is detected
- Non-volatile memory will retain all programming and real-time data for 10 years
- Multi-language display: English, Spanish, French, and Italian
- Operating temperature: 14° to 140°F (-10° to 60°C)
- Surge rated to 20 KV @ 10 KVA

Dimensions

- Small wall-mount:
10 1/4" W x 15 1/4" H x 5 1/4" D (260 x 387 x 133mm)
- Stainless steel wall-mount:
17 1/8" W x 30 3/4" H x 8 5/8" D (435 x 781 x 219mm)
- Stainless steel pedestal-mount:
17 1/8" W x 34 1/2" H x 8 5/8" D (435 x 876 x 219mm)
- Plastic Pedestal-mount:
17" W x 40" H x 16" D (432 x 1016 x 406mm)
- Weight:
 - Small Metal Wall-mount: 21 lbs (9,5 kg)
 - Stainless steel wall-mount: 47 lbs (21,3 kg)
 - Stainless steel pedestal-mount: 64 lbs (29,0 kg)
 - Plastic Pedestal: 60 lbs (27,2 kg)

Electrical Specifications

- Input power:
 - 120 VAC, 60 Hz
- Station output power:
 - 24 VAC
 - 1.0 amps per station maximum
 - 2.0 amps total load
- Surge protection: 24 V output boards, 20 KV @ 10 KVA
- UL Listed

Optional Accessories

- TRS – Wired RainSensor
- TWRS/TWRFS – Wireless RainSensor or Wireless Rain/Freeze Sensor
- TFS – Flow Sensors
- SHHR - Hand Held Remote
- TS-TGB - Turf Guard Base Station Module for Sentinel Satellite Connectivity
- TG-S2-R - Turf Guard Soil Sensor
- TS-U2 - Toro Sentinel UHF Radio for Two-Way Communication with Central

Warranty

- Five years



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 Specifications subject to change without notice. For more information, contact your local Toro distributor.
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Software

Specifications and Features

- Control up to 999 field satellites
- Group controllers into "systems" for system-wide adjustments:
 - Rain Days
 - Percent Adjust
 - ET-Adjustment from shared weather source
- Field changes to controller programs can be uploaded to computer
- Support for the System Administration
 - Set system, program and satellite descriptions
 - Map valve positions on site maps
 - Group related Satellites into Systems sharing common functions
- Alarm reporting of any system component failure, including communications, over/under-flow conditions, electrical problems or power failure
- Extensive reporting features:
 - Run time reports
 - Water usage
 - Alarms
 - Logging of system changes
- Water use, rain and ET accumulation
- Flow optimizing to maintain optimum flow and shorten water window
- Ability to redefine valve sequence without physically changing wire terminations in field satellite
- Information overview by group and satellite
- System status indications for individual field satellite
- Map-based feedback on system status
- Standard telephone modem or internet connection allows for remote access to central software via NSN® Connect or other remote access software
- Optional web-based Precision™-ET service for automated ET scheduling

Specifying Information— NSN/Sentinel Support Extensions

SSE-X-X	
Description	Optional
SSE	-X-X
SSE—Toro NSN Support for Sentinel Subscription Extensions*	T-1— 1-year Extension for SGIS-0-1 or SGIS-1-T T-3— 3-year Extension for SGIS-0-1 or SGIS-1-T C-1— 1-year Extension for SGIS-1-0 (w/computer warranty) C-3— 3-year Extension for SGIS-1-0 (w/computer warranty)

*1- and 3-year NSN extensions can be purchased up-front in conjunction with SGIS packages to provide the end-user with an additional one or three years of NSN support. For example, a customer can order the SGIS-1-0 and the SSE-C-3 which would equal five years of NSN support. These extensions are for original purchases only; existing plan renewals are still purchased through Toro NSN.

Specifying Information— Sentinel Central

SGIS-X-X	
Description	Optional
SGIS	-X-X
SGIS—Sentinel Central Control Irrigation System	1-T—Software Only w/2 Years of NSN Telephone Support for Software 0-1—Software, Peripheral Hardware w/2 Years of NSN Telephone Support 1-0—Software, Computer Equipment, Peripheral Hardware w/2 Years of NSN Telephone Support (with computer warranty)