



Quick Start Guide FOR THE DXi

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Getting Help

Toro strives to build safe, durable, and easy to use product. If, however, you encounter a problem that referring to this manual cannot resolve, please contact an authorized Toro product expert for assistance via phone or email.

U.S./Canada:

Phone: 1-800-777-1477 (7:30 am–4 pm, M–F, PT)

E-mail: irrigationsupport@toro.com

Chapter 1: Introduction

Thank you for supporting Toro® and the Laguna™ and Sentinel DXi™ central control platform. We hope the DXi will exceed your expectations and contribute to Toro's legacy of innovation and service.

About the Controller

Toro believes in minimizing waste by maximizing water application efficiency. The DXi provides precise control of irrigation delivery systems through a flexible network that could fit almost any application. DXi will work with your Rain Master Laguna software and Toro's Sentinel WMS software to monitor, adjust, and report on irrigation schedules to your technical comfort level.

The DXi controller comes in twelve “base model” versions:

- DXI-PWM08
- DXI-PWMTW
- DXI-SWM08
- DXI-SWMTW
- DXI-SPED08
- DXI-SPEDTW
- DXI-SPEDHY08
- DXI-PSB08
- DXI-PSBTW
- DXI-DPSB56
- DXI-PPED08
- DXI-PPEDTW

Additional add-on kits can be added to the base models to accommodate your irrigation needs:

- DXI-OPB08-EXP - DXi 8-station output board expansion kit
- DXI-CELL-EXP - DXi cellular kit with antenna
- DXI-RADIO-EXP - DXi UHF radio kit with antenna
- DXI-RADIO-P-EXP - DXi UHF radio kit with antenna
(for plastic pedestal only)
- DXI-WIFI-EXP - DXi wifi kit with antenna
- PMRKIT - ProMax permanent-mount remote receiver with antenna
- PMRKIT-P - ProMax permanent-mount remote receiver with antenna
(for plastic pedestal only)
- DXI-WOB-E-EXP - DXi 900MHz XTND Radio Kit, WMS DXi only
- DXI-WOB-E-P-EXP - DXi 900MHz XTND Radio Kit, WMS DXi only (for plastic pedestal only)

Hardware Features

Capacity*:

- Up to 96 stations per satellite in conventional configurations, 200 stations per controller in two-wire (TWICE™) configurations.
- Up to 48 conventional stations + 100 two-wire stations in our hybrid models (for TWICE two-wire conversion projects).
- For Laguna: Three dedicated master valve (MV) outputs, either normally closed or normally open.
For Sentinel WMS: One dedicated master valve (MV) output
- No auxiliary 24VAC relays for pumps, lights, etc.
- Up to Six inputs to connect flow sensors/meters or other pulse-data devices. (Note that these devices are independent of the optional Laguna and Sentinel *wireless* weather solutions.)
- Two alarm inputs and a 4-20mA sensor input
- An expansive, 4.4” LCD back-lit display with rapid menu navigation and “digital ink” for high visibility in the sun.
- Integrated cabinet access lighting or “fridge light” and pivoting brackets for improved setup and service access (select models)
- Transparent, custom – fit plastic covers for all circuit boards for added protection against the elements and pests (certain models).
- Multiple system communication options: 4G LTE, UHF radio, Ethernet, WiFi and Serial port.
- Lightning protection up to 18kV

* DXi controller capacity will vary between Sentinel WMS and Rain Master Laguna centrals.

- Integrated amperage meter to enhance internal diagnostics and trouble-shooting.
- Up to nine simultaneous station-related operations (six valve and three MV)
- Cloud connect feature that enables cloud-based control via central software and mobile phone app.
- Sentinel DXi systems feature Wireless Output Board Control for operating stations using license-free radio with a range of several hundred feet.
- Laguna DXi systems feature robust Flowmax hardwire bus connectivity between controllers.

Scheduling and Programming Features

- 16 conventional programs with up to 12 start times per program
- Exclusive DX series Individual Station Control (ISC™): Treat every active station as an individual program
- Customizable scheduling calendar with up to 48 exclusion days
- Programmable MV and Station Delay
- Global water window (ISC & Manual can override)
- English, Spanish and French language settings
- Imperial (Standard) or Metric standard units of measure

Program Setup Options

Setup Menu	Option	Default
Time/Date		12:00:00am
Language	English / Spanish	English
Flow		
Omit by Date		
Communication		
Current Checks		
Firmware Update		
Learn Flow / Current		
About		

Maintenance and Alarm Diagnostic Capabilities

- Flow monitoring. Overflow, underflow, unscheduled flow, and catastrophic occurrence monitoring and reporting.
- Electrical alarm with station shutdown and program advance for station/s over current, shorts, damaged wires, and/or faulty solenoids.
- Power outage restoration alarms.
- LED indication for station outputs.
- Electrical self diagnostic test to verify communication between the timing mechanism (TM) and all modules.

- Manual test mode that can advance stations while displaying valve electrical current and station flow data.

Communication Features

The DXi is capable of communicating with the Central software over a variety of communication technologies.

4G LTE	Optional accessory for Central to sub-master communication.
WiFi	“Short range” standard WiFi to Central, sold as an optional accessory.
Ethernet	Standard on all DXi systems.
Ethernet-to-Radio	Sold as an optional stand-alone accessory.
UHF Radio	Sold as an optional stand-alone or embedded accessory.
Serial cable	Serial communication to Central or Diagnostic PC.

Icons Explained



A note to clarify.



Important



Warning! Risk of electric shock



Rotate the Control Dial.



Press the Control Dial.

Chapter 2: Overview

Because not all irrigation applications are identical, the DXi controller has been designed to allow users to establish a wide variety of individual programmable options. These options include changing configuration of programs, irrigation stations, the controller and sensors. Individual Station Control (ISC) is available on DXi Laguna. Wireless Output Board Control is available on DXi Sentinel.

The Faceplate

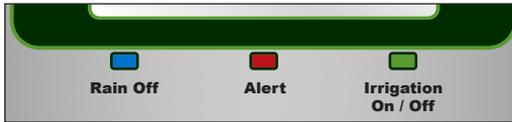


The Buttons

Button	Function
	<p>Control Dial</p> <p>Rotate to switch between fields on a screen and change values within those fields.</p> <p>Press to enter a desired field and to save the value.</p>
	<p>Left, Right, and Back buttons</p> <p>To navigate screen and menu selections.</p>
	<p>“A” button</p> <p>To...</p>
	<p>“B” button</p> <p>To...</p>
	<p>Command button</p> <p>To execute the on-screen command closest to that particular command button.</p>
	<p>All Stop</p> <p>To stop all current irrigation activity.</p>
	<p>Manual</p> <p>To manually operate the controller.</p>
	<p>Dashboard</p> <p>To return the controller to the “Dashboard” screen.</p>
	<p>Review</p> <p>To review irrigation program settings.</p>

The LEDs

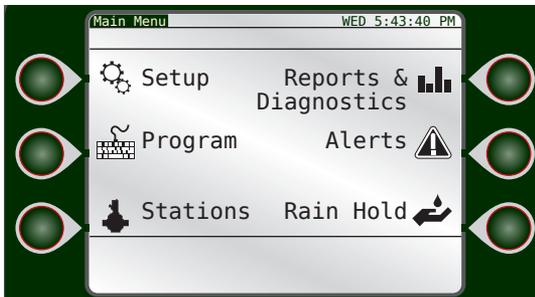
The DXi has three LEDs beneath the main LCD screen. Each LED illuminates for a specific reason:



Rain Off (blue)	Illuminated when the Rain Off command is active. All irrigation activity is suspended when this light is on.
Alert (red)	Illuminated when a user alert for the operator has been triggered, such as after a loss of power or loss of pressure. Alerts must be manually cleared in the Alert submenu.
Irrigation (green)	Illuminates when irrigation is actively in operation. If no sprinkler or station is running, the irrigation LED will be off.

The Screen

The Liquid Crystal Display (LCD) screen on the DXi controller is 4.4” QVGA monochrome display screen capable of 320x240 pixels.



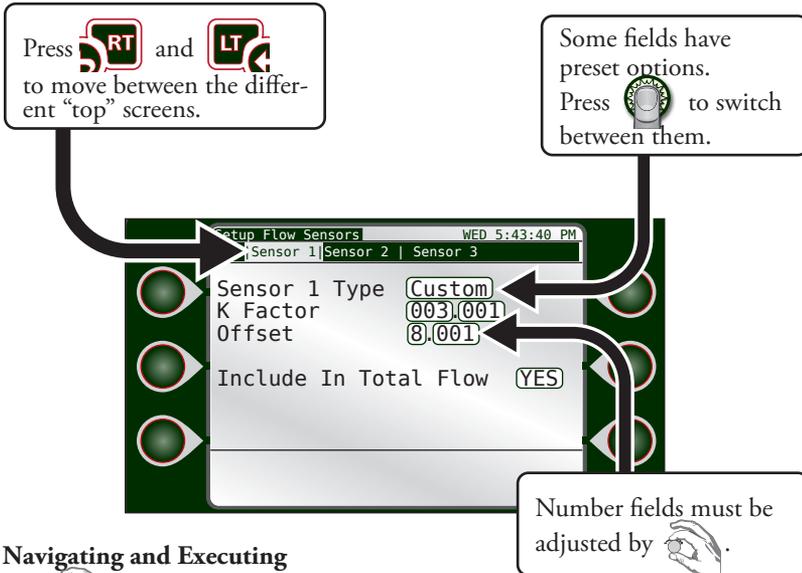
The main menu

On both sides of the screen are three command buttons for quick and easy execution of the button’s assigned command.

Menu Navigation

Navigating menus and executing commands in the DXi is easy with the various buttons and the Control Dial.

To navigate the typical DXi screen, we will use the below as an example.



Navigating and Executing

1.  to navigate between adjustable fields.

The "active" field will have a black box around it.

2.  to enter the "active" field.

3.  to adjust the value.

 *Some fields have preset options like "Custom" vs. "Data Ind". Other fields are numeric and are adjusted incrementally.*

4.  to set desired option.

5. Repeat steps 1 - 4 for all adjustable fields.

Chapter 3: Quick Start

This chapter is a step-by-step tutorial for rapid and basic controller setup. For the demonstration, we will set up an irrigation schedule with 2 start times: 6:15am and 8pm daily, 1 cycle at 10 minutes per station.

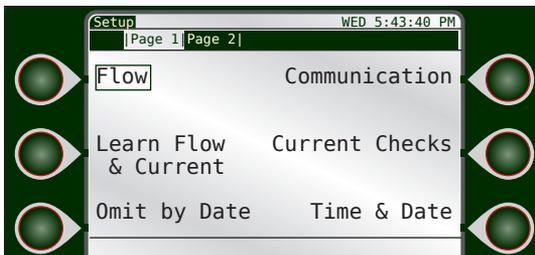


The Quick Start guide does not address advanced features such as sensor setup, flow, or ET. Please refer to the DXi User Guide (373-0920) for complete operating instructions

Before we can program an irrigation schedule, we must enter the date and time.

To get to the Setup screen from the Dashboard, press

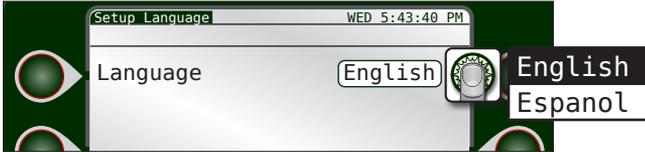
the Control dial  or any one of the Command buttons .



The Setup Screen

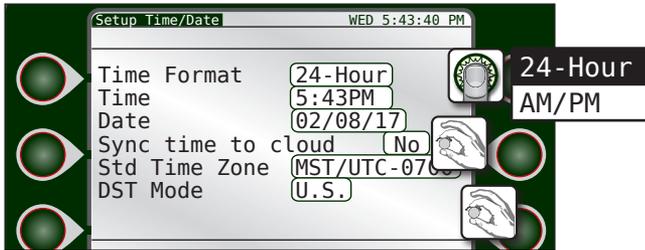
Setting the Language

- 1)  Setup
- 2)  Language
- 3)  to change language.
- 4) When done, press .



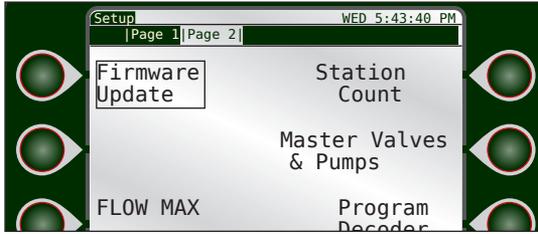
Setting Current Date and Time

- 1)  Setup
- 2)  Time/Date

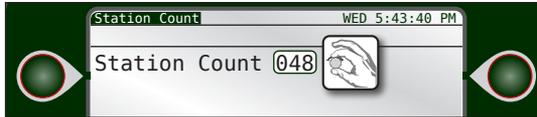


- 3)  Switch between the 3 time/date fields.
- 4) Using the navigation techniques from page 14, adjust fields as necessary.
- 5) Repeat as necessary for the other fields. When done, press .

Station Count



Page 2 of the Setup menu shows Station Count. Setting the correct number of stations for the DXi system is required for proper controller operation. The station count variable dictates how many stations participate in the Learn Current/Flow events. If the wrong number of stations are entered, the Learn Current and Learn Flow events do not operate correctly.



Communication with Central

DXi controllers can communicate with a Central computer running either Sentinel WMS or Laguna so that the Central can manage multiple controllers. For information on setting up this system-wide communication, please see the complete DXi User manual.

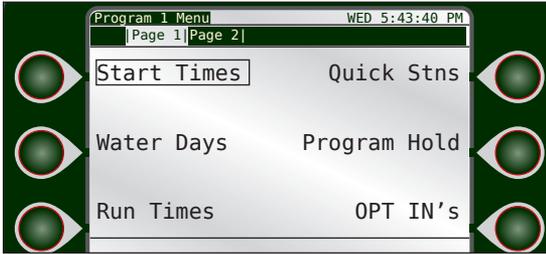
Creating a New Irrigation Schedule

Now that the language, date and time, and station count are set, we can set up the irrigation schedule.

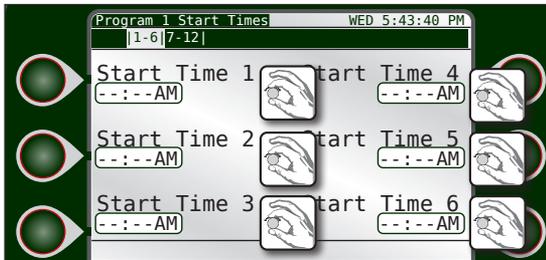
Program Start Time

1)   Program

2)  Program 1



3)  Start Times



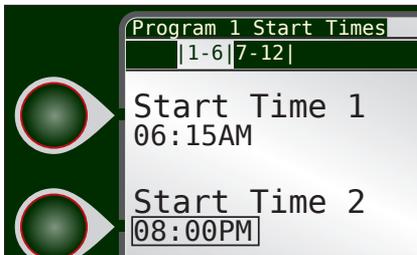
It is possible to have 12 start times per program.

4)  and  to adjust the first start time to 6:15am.

5)  and  to adjust Start Time 2 to 8:00pm.

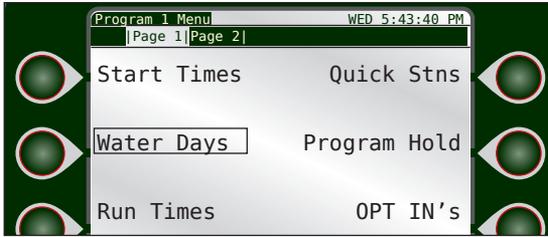
 Press 'A' to clear start times.

Start times set!

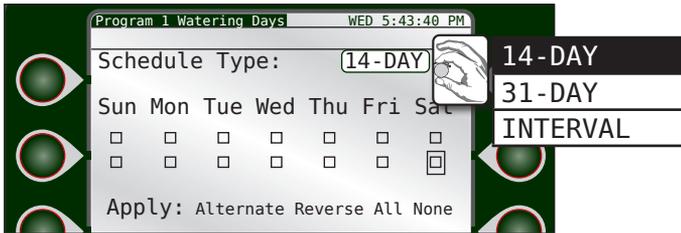


6) When done, press .

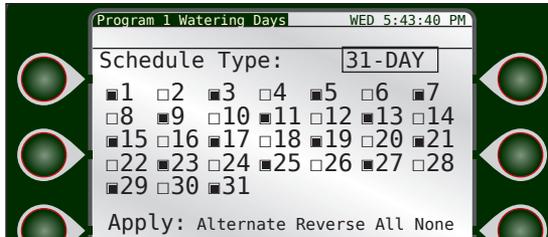
Water Days



1) Water Days

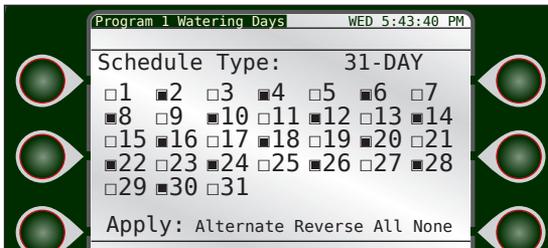


2) Enter **Schedule Type** field. 3) Change to desired schedule. I chose **31-DAY**.



4) Set Schedule Type. 5) to Alternate.

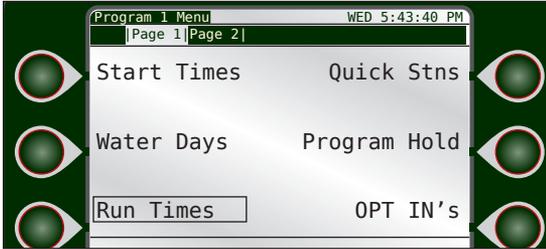
6) Set Alternate. 7) When done, press



Alternate days are active.

Station Run Times

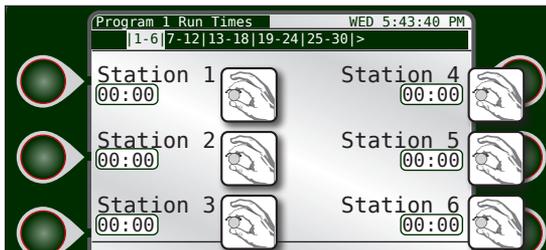
1) Run Times



2) Enter **Station 1** hours field. Our run time will only be for ten minutes, so we can switch to the minutes field.

3) Switch to minutes field.

4) Adjust desired run time in minutes.

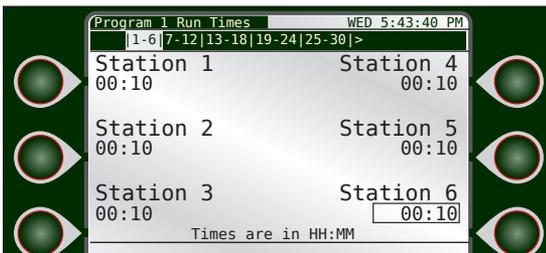


5) Set Station 1 run time.

6) Switch to next Station field.

7) Repeat steps 2-6 for as necessary for as many stations as desired.

Press 'A' to clear run times.



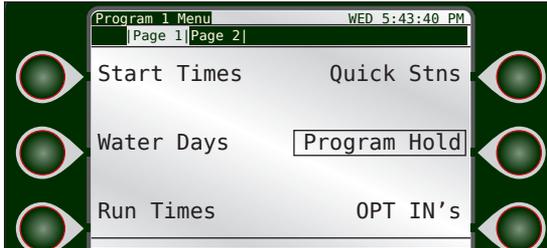
Stations 1 - 6 set with ten minute run-times.

Program Hold

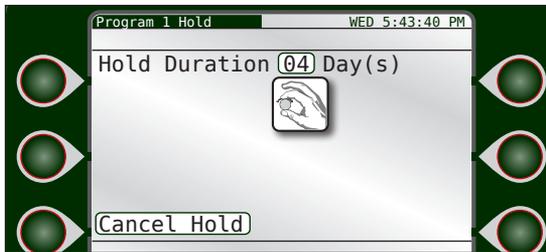
A storm is coming! Irrigation will not be needed for a few days. Let's activate a Program Hold on Program 1.

1)  Program

2)  Program 1



3)  Program Hold



4)  Enter **Set Day(s)** field.

5)  Change to desired days. 4 days to dry out.

6)  Set value.

7) When done, press .

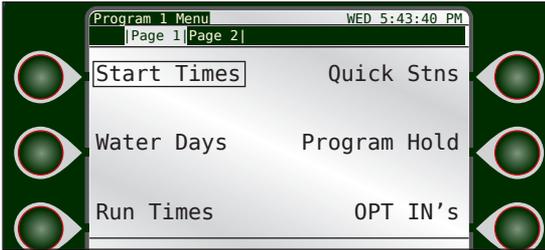
% Adjust

The weather overall is getting cooler.

Let us decrease the overall amount of irrigation for this program.

1)   Program

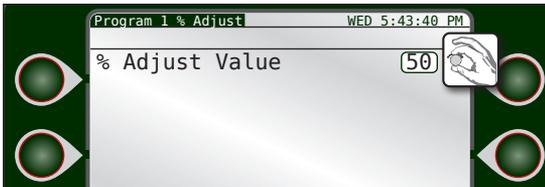
2)  Program 1



3)  to get to the Page 2 Program 1 Menu screen.



4)  % Adjust



5)  Enter % **Adjust** field.

6)  Change to desired %.
I reduced to **50%**.

7)  Set value.

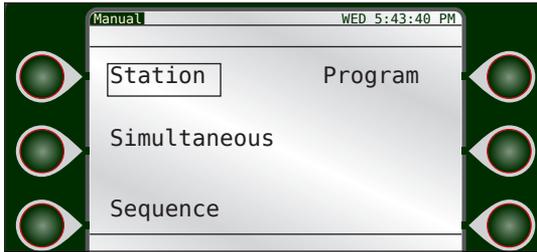
8) When done, press .

 Above, we set our run times to ten minutes per station.
A 50% runtime would therefore cut that in half, to five minutes.

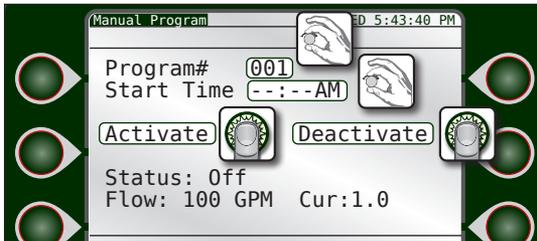
Manual Operation

The grass is a little dry. Let us run a manual program operation at 10pm to help keep that grass green.

- 1) Press the  Manual button.



- 2)  Program



- 3)  Enter **Program#** field.
- 4)  Select program to run. I chose 1.
- 5)  Set Program value.
- 6)  Navigate to **Start Time** field.
- 7)  Enter **Start Time** field. Hours field will flash.
- 8)  Change hour value to 10.
- 9)  Switch to minute field.
- 10)  Switch to AM/PM field.
- 11)  Change to PM.
- 12)  Set value.
- 13) When done,  to the **Activate** field and  .
The operation will execute this evening and save the grass.

WANT THE WHOLE ENCHILADA?

To download the complete DXi User Guide, please visit www.toro.com.
For your free printed and bound copy, simply call or email us today.
We are happy to send one to you. Thank you for your support!



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