

Nelson 8710 EZ Pro™ Max: Controller Specifications

The irrigation controller shall be capable of automatic, semi-automatic and manual operations. The controller shall be offered in an indoor/outdoor model with an ABS plastic locking cabinet with key. The wall-mount type controller cabinet shall be weather resistant and have an internally mounted transformer. The cabinet shall have openings, in the bottom, for communications, control wiring and power. The cabinet shall have perforations for mounting screws, lower right and middle inside the cabinet and one on the top middle of the cabinet. The controller shall include a programming interface with a 24 position rotary switch, eight programming buttons and a liquid crystal display.

The controller shall operate and maintain up to 64 zones and 16 digital time domain transmissometry soil moisture sensors. It shall be capable of operating as a stand alone controller and be operated remotely by a personal computer using a Windows™ operating system through an RS232 serial connection or phone line connection by direct wire or radio link. The controller shall be capable of logging all activities and sensor data and uploading the logs to the PC when connected. The controller shall carry a two-year warranty.

The controller shall have a customizable and independent program for each zone. The programming shall include a 365-day calendar including leap years. Manual zones, groups of zones or programs shall be run at any time without affecting the normal programming. Each zone shall be programmable in one of three modes:

- 1) **Water on Demand.** Used in conjunction with a digital time domain transmissometry soil moisture sensor(s). Zones with a sensor installed have a minimum and maximum user set moisture threshold and customized cycle and soak durations. Each zone may be programmed to run independently from any other zone during certain times of the day or days of the week and allows event scheduling.
- 2) **Dependent Water on demand.** Zones without a digital time domain transmissometry soil moisture sensor shall be able to be set as a dependent zone to use the readings of a reference zone employing a digital time domain transmissometry soil moisture sensor. The dependent zone shall be assigned to run as a percentage of its reference zone with its own custom cycle and soak time. Each zone, whether reference or dependent shall have its own customizable watering window.
- 3) **Time based.** Any zone shall allow a run time from 0.5 to 720 minutes adjustable in 30 second intervals. Each timer based zone shall have its own cycle and soak time along with a customizable watering window.

The controller shall utilize a 2-wire system for communication and control, powering standard 24V AC valve solenoids. Compatible system decoders shall be used at each valve to communicate over the 2-wire system to and from the controller. Decoders shall be 2 valve or 4 valve configuration and each digital time domain transmissometry soil moisture sensor shall have a built in decoder for one valve. The controller shall be able to support up to 64 valves and have the electrical capability to operate up to 5 standard 24V AC solenoids simultaneously. Each valve decoder port shall be able to operate 2 7VA solenoids. The controller shall be capable of watering 4 zones simultaneously.

The controller shall be compatible with 2 or 4 zone decoders and 16 or 32 zone converter boxes suitable for linking a convenient multi-circuit valve communication system to the 2-wire controller communication system without the need for additional adaptors at each valve.

2-wire pair shall be polyethylene insulated #14 or larger direct burial wire, one red and one white. All splices to the 2-wire pair, adaptors and sensors must use 3M, DBY (direct burial) connector kits with grease caps or equivalent.

Lightning arrestors shall be built into each digital time domain transmissometry soil moisture sensor, valve adaptor and controller. All metal components of the sensor shall be electrically isolated to prevent galvanic corrosion.

The controllers Real Time Clock shall be battery backed insure operation for up to ten years.

If the controller has a phone line installed the controller shall be able to communicate with a touch tone phone (standard or cellular) to pause the system or run a manual zone or program.

The controller shall have an interface to receive data from a flow meter. The controller shall be able to manage flow to optimize performance by running up to 4 zones at one time.

The controller shall be able to log soil conductivity, soil temperature and soil moisture from multiple digital time domain transmissometry soil moisture sensors and store the logs until downloaded to a computer where the logs shall be able to be viewed in separate graphs.

The controller shall be able to interface through an RS232 serial port or phone line connection to the Windows™ -brand irrigation management software.

The controller shall be as manufactured by Acclima Inc., Meridian Idaho.