

A Comparison of Battery Operated Irrigation Controllers Merits, Benefits, and Usage[©]

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With the newer developments of integrated circuits and digital technologies, portable irrigation controllers can be effectively utilized. Such clocks are economical, generally reliable, weather proof, and operate on commonly obtained batteries such as C cells, AA, 9V, and D cells. These clocks come in a range of forms and functions from simple irrigation one time a day for the analog versions to up to six times a day for the more complex digital versions. They also come in two forms for the actual control of the water flow. One is a mechanical version which utilizes a small electric motor to actuate the valve and the other uses standard solenoid technology with a magnetic plunger which shuts the valve on and off in the same manner as standard irrigation valves utilizing 12- or 24-volt systems.

The fully programmable digital clocks that utilize solenoids are superior to all others (Galcon and DIG) but can be quite expensive, however their performance is unflawed and can last for many years. Digitized mechanical clocks are good but the mechanical portions of the clock can be defective over time with problems occurring from burned out motors and from mechanical linkages becoming misaligned resulting in the clocks being either totally off or totally on. Such clocks need to be checked regularly for irregularities and malfunctions. In particular the Gilmour clocks are prone to this. Some really complex digital clocks such as the Melnor series are hard to program and have proven to be very susceptible to electrostatic charges from lightning in the area from thunderstorms. So far Nelson clocks have proven to be the best over all for both economy and reliability with little or no serious malfunctions over a several year period. Sometimes mechanical difficulties can be overcome by switching removable parts from an expired clock to another.

It is best to have a few back-up clocks just in case there is a break down as they are easy to switch out by using simple hose or threaded connections. Over all these clocks as a whole can make remote areas more useable by providing control technologies where water is present but electrical service is not available.

Table 1. A comparison of various battery-operated time clocks for irrigation and mist application.

Timer	Multiple battery (Y/N)	Battery type	Life	Type of valve	Ease of program	Mist cycle (Y/N)	Cost (\$)	Recommendation (1=good, 5=poor)
DIG Digital	yes	2D	2 yr	solenoid	very easy	no	\$100	1
Gilmour digital	yes	2AA	6 mos	mechanical	easy	no	30	3**
Gilmour analog	no	2AA	6 mos	mechanical	complex	no	20	3**
Nelson digital	yes	2C	6 mos	mechanical	easy	yes	35	2
Nelson analog	yes	2C	6 mos	mechanical	easy	no	25	3
Galcon	no	2, 9V	2 yr	solenoid	difficult	yes	150	3
Melnor digital	yes	2 AA	6 mos	mechanical	very difficult	yes	35	5*
Melnor analog	no	9V	N/A	mechanical	easy	no	25	3

*Melnor Digital clocks are prone to electrostatic charge damage from lightning in the local area. This clock has a 5 rating due to the difficulty in programming and has proven to be unreliable due to programming errors.

**Gilmour clocks are prone to a mechanical malfunction, which leaves them in the on position. It is simple to correct but if undetected the valve can run constantly until physically turned off.