

# CIT Report

TEST REPORT MEMO TO: George Alexanion, Alex-Tronix Controls, Fresno  
FROM: Ed Norum, P.E. Agricultural Engineer  
DATE: August 10,1999  
SUBJECT: Results of useful battery life test on Alex-Tronix  
10 battery control system for irrigation system c

## Executive Summary:

The Center for Irrigation Technology conducted independent tests of Tronix model BCS-10 (battery control system) irrigation system control tests evaluated battery life and limits of control wire length at reduced and elevated water pressure.

These bench tests utilized three BCS modules attached to three two-latching DC solenoids and wired to a BCS controller. A second system three, three-way DC latching solenoids. Four, nine volt lithium battery controller power the valve control circuits. The results are summarize follows:

Both circuits functioned satisfactorily after a continuous operation of 3 representing 16,423 individual valve off-on cycles at 60 psi. Assuming average of 2000 valve cycles per year this is the equivalent of over ei operation.

Using a fixed resistance to simulate 14 gauge control wire length, a b voltage of 29.6 volts to simulate eight years of operation, and elevate of 150 psi (static) and 130 psi (operating), the two-way solenoid funct satisfactorily with a loop length of 39.0 miles. In a similar test using a voltage of 26.9 volts, the three-way solenoid functioned satisfactorily length of 9.8 miles.