



Pro50™ & Pro50K™

Digital AC/DC Solenoid

Activator w/Multi-Meter

**Activador Digital para los Solenoides de CA/CC con
Multímetro**

Instruction Manual

Introduction

This guide is intended to acquaint you with the safe operation and maintenance procedures for the Armada Technologies® Models Pro50™ and Pro50K™ digital AC/DC Solenoid Activator/Multimeter and kit. Read the entire guide before operating the Pro50™ or Pro210F™ filter tone probe found in the kit. Keep this guide available to anyone who may be required to use these products.

DESCRIPTION

The Pro50K™ consists of a Pro50™ tester, a Pro210F™ advanced tone probe, and a soft carrying case. The functions of the Pro50™ include:

- Testing 24V output from the clock/controller.
- Activating any AC or DC low voltage solenoid.
- Chattering any AC or DC low voltage solenoid for lost valve locating.
- Powering two-wire irrigation control cables to allow fault finding.
- Sending beeping tone to identify wires.
- Measuring AC or DC voltage and resistance.

The Pro210F™ Filter Tone Probe is an advanced inductive probe for identifying wire termination points in conjunction with the Pro50™ transmitting in tone mode.

Safety

WARNING: To ensure safe operation and service of the Pro50™, follow these instructions. Failure to observe warnings can result in severe injury or death.

- The Pro50™ is designed for use on low voltage circuits only.
- Connection to AC power line voltages could damage the Pro50™.
- Use the Pro50™ only as specified in the user guide.
- Use caution around voltages above 30 VAC rms, or 60 VDC. These voltages pose a shock hazard to the user.

A. Battery Test

1. A battery icon appears on the top right side of the LCD screen of the Pro50™ while in use. When batteries are fresh, the entire icon should be filled and solid. When the icon is empty, so are the batteries.
2. The Pro50™ and the Pro210F™ both require 4 AA batteries each and are inserted on the back of each unit.

B. Operation

1. The power switch is located on the front of the Pro50™ in the bottom right corner. To activate, push the power switch and hold until the screen becomes active.
2. The Pro50™'s LCD display shows the functions available and test conditions. The main screen is pictured below – you can choose to work with:
 - a. F1: a 9 VDC (battery) system.
 - b. F2: two-wire fault-finding mode.
 - c. F3: a conventional 24 VAC system.

Select the test function using the F1, F2 or F3 Main Control keys below the display.



F1: Operation with battery-powered controllers and remote DC latching valve solenoids.

1. Connect the Pro50™ to a zone wire and associated common wire of the valve you wish to test and turn it on.

- When selecting F1 from the main screen, the Pro50™ can test and operate the remote DC latching valve solenoids. On this DC screen, use the F1 ON to activate the solenoid or use F2 CHATTER to make the solenoid quickly turn on and off to locate (BE SURE THE WATER IS TURNED OFF). Selecting F3 turns both F1 and F2 off.
- Press the left arrow to return to the main screen. Press the right arrow to go to the next screen, which is the multimeter screen.



F3: Operation with AC controllers solenoids.

Again, from the main menu, for AC valve actuation or chatter, use F3. This takes the user to the AC solenoid menu (see picture below). Once on this menu, the instructions are the same as above in the F1 section.

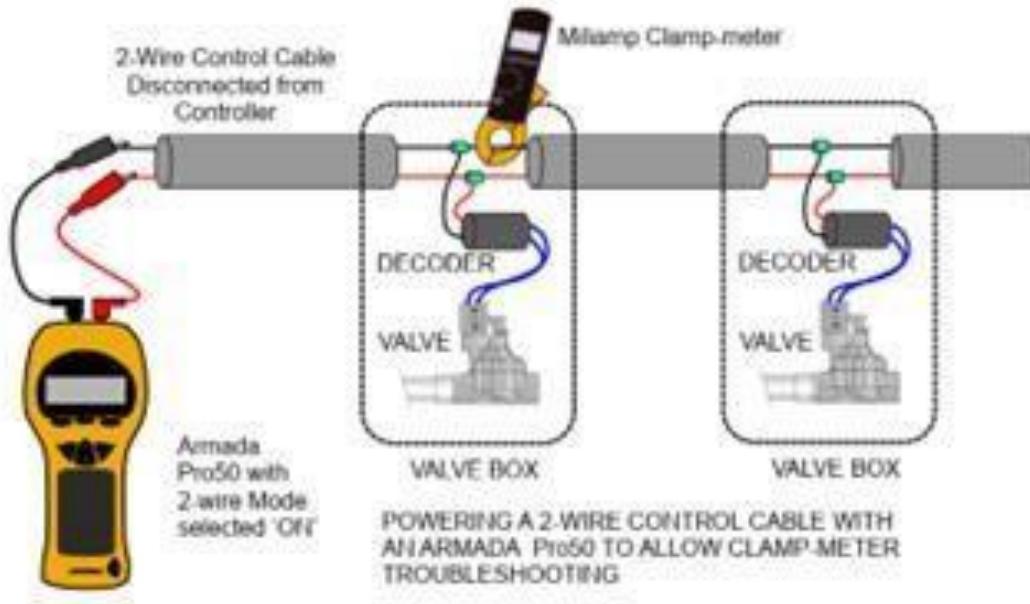


F2: Two-wire irrigation fault-finding mode

From the main menu, press F2 to access the two-wire irrigation fault finding mode. This mode places power on field cables via the test leads, allowing the user to troubleshoot the system using a milliamp clamp meter (like the Armada Pro95i). The clamp meter can detect

the current pulled by most two-wire components like decoders and sensors on the field cable. To use this function:

1. Disconnect the two-wire control cable from the controller.
2. Connect the Pro50™ test leads to the two-wire control cable (red to red, and black to black). See image below.



3. Press F2 from the main screen. This will pull up the two-wire fault-finding screen. See image below.



4. Press F1 ON to power the 2-wire cable. This will provide power to the two-wire cable for 15 minutes before timing out. Press F2 if you'd like to change the timeout from 15 minutes to 30 minutes.
5. Press F3 OFF to stop powering the two-wire cable.
6. Press the left arrow to return to the home screen.

How to Use the Digital Multimeter

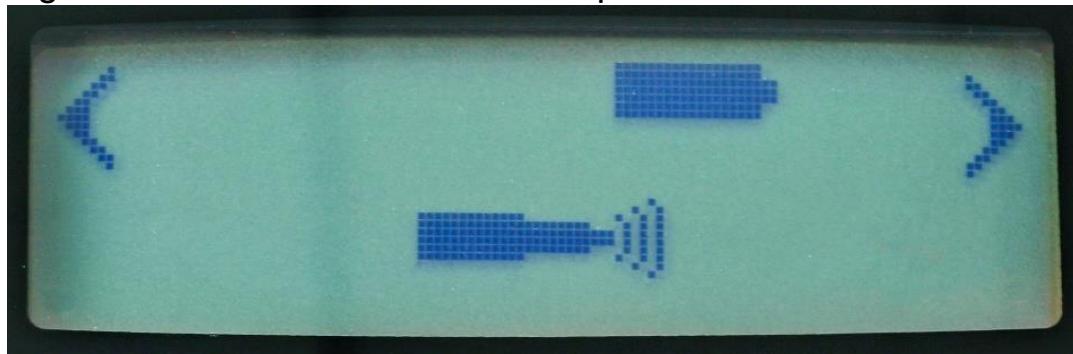
To utilize the built-in digital multimeter, press either the left or right arrow keys from the main menu screen. The symbols for Voltage DC, Ohms, and Voltage AC will appear. See screenshot below.



Connect the Pro50™ to the zone or item you wish to test. Press F1 for DC Voltage, F2 for resistance ohms, or F3 for AC Voltage. The Pro50™ has auto-range capability, meaning that the expected range is not required to be entered into the Pro50™.

How to Send Tone

From the home screen, press either the left or right arrow two times to get to the send tone screen. See picture below.



Then press F2 to activate the built in tone generator for wire identification. The three lines will blink, indicating that tone is being sent. A Pro210F™ filter probe will be required to hear the tone at the far end. When activating the tone, connect the red alligator clip of the Pro50™ to a single conductor that the user wishes to identify. Connect the black alligator clip to ground for best signal. Once connected and activated, the user can identify the cable attached to the Pro50™ by taking the Pro210F™ to the far end of the cable and listening for the loudest tone coming from a particular cable or wire. The loudest is generally the wire to be identified.

MAINTENANCE

The Armada Pro50™ requires 4 AA batteries for operation (not included).

SPECIFICATIONS of the Pro50™:

Connections: Removable Standard Multimeter Alligator Leads. 24 inch, Red and Black. Cat IV, 600v.

Tone tracing transmit power: +6 dBm (600 ohms).

Line transmit frequency: 900 Hz alternating with 1050 Hz, at a 2 Hz rate.

Line voltage protection: 120 VAC or 120 VDC.

Battery type: Four (4) 'AA' or LR6 cells.

AC Solenoid Operation: 24 volts AC.

DC Latching Solenoid Operation: +9 VDC and -9 VDC pulses 40 milliseconds.

Test Range: 3,000 feet (1 km) over 18 ga (1 mm) cable.

Built-in Multimeter: Tests AC or DC to 40 volts, auto-ranging.

Electrical Resistance: From 0 to 40 kilohms, auto-ranging.

Display: 0.5 x 2 inches (12 x 50 mm) LCD.

Battery Saving Timeout: 15 minutes.

Operating Conditions: +32 to +120 degrees F (0 to +50 degrees C).

Unit Size: 7 x 3 x 1.5 inches (175 x 80 x 35 mm).

Weight Including Test Leads: 8.5 ounces (240 g) without batteries.

One-Year Limited Warranty

Armada Technologies warrants all products will be free from defects in material and/or workmanship for a period of 12 months from the date of retail purchase. Abuse or misuse is not covered by the warranty and is determined at the sole discretion of Armada Technologies.