



INSTRUCTION MANUAL

Model Pro48 TechTool

INTRODUCTION

This guide is intended to acquaint you with the safe operation and maintenance procedures for the Armada Technologies Model Pro48 TechTool Solenoid Activator. Read this entire guide before operating the Pro48 and keep this guide available to anyone who may be required to use the Pro48.

Safety

Safety is essential in the use and maintenance of Armada tools and equipment. This instruction manual and any markings on the tool provide information for avoiding hazards and unsafe practices related to the use of this tool. Observe all of the safety information provided.

NEVER CONNECT THE PRO48 TO 110 VOLT POWER SUPPLY OR HIGHER. THE UNIT WILL BE DAMAGED AND PERSONAL INJURY OR DEATH MAY OCCUR.

THE PRO48 EMITS A 36 VOLT POWER SOURCE FROM THE ALLIGATOR CLIPS. DO NOT TOUCH THEM WHILE UNIT IS IN OPERATION.

DESCRIPTION

The Pro48 TechTool is a portable, battery operated irrigation system tester and solenoid activator. Its functions include:

- Testing voltage/current from the clock
- Activating solenoids
- Testing solenoids for continuity
 - Chatter the solenoid for location of valve
- Sending tone to identify wires

OPERATION

Battery Test

1. Connect the leads together.
2. Place top switch to the SOLENOID ACTIVATE mode.

3. If the batteries are good (at least 15 volts) the SHORT LED will turn on. If batteries are weak, the short light may only stay on briefly or not at all. Replace batteries (alkaline preferred) for best operation.

Clock Test

1. With the clock on and turned to the station under test, switch the Pro48 to the OFF mode.
2. Connect the red lead to the station wire and the black lead to common.
3. If proper voltage/current is detected, the CLOCK 24V AC LED will turn on.

Solenoid Activate & Test

NOTE: The Pro48 TechTool cannot activate solenoids that run on AC voltage only (ie. capacitor coupled solenoids).

Activating solenoid at the clock

1. To activate solenoids from the clock, turn the clock off and turn top switch the Pro48 to OFF.
2. Connect the Pro48 by attaching the red lead to the station wire and the black lead to the common.
3. Place the side sliding switch to ACTIVATE and the top switch to SOLENOID.
4. The solenoid under test should activate and the GOOD LED (see display on the front of the Pro48)

should turn on. If the solenoid does not activate, one of the following conditions may exist:

- Short: SHORT LED is on (< 10 Ohm)
- Open: OPEN LED is on (> 200 Ohm)

5. The Pro48 must be turned off to reset the unit after the solenoid is activated. NOTE: If the GOOD LED does not illuminate, the solenoid should be tested at the valve. The wires may be the problem To do this;

1. Turn the clock off and put the top switch to the OFF mode.
2. At the valve, attach the red lead to the station wire and the black lead to common.
3. Switch to SOLENOID mode and select side switch to ACTIVATE.
4. The solenoid should activate and the GOOD LED (see display on front of unit) should turn on. If the solenoid does not activate, one of the following conditions may exist:
 - Short: SHORT LED is on (< 10 Ohm)
 - Open: OPEN LED is on (> 200 Ohm)

NOTE: If the GOOD LED is on and the solenoid does not activate, it may be due to a mechanical failure in the valve.

Chatter the solenoid valve

NOTE: The GOOD LED must illuminate under the "Solenoid and Activate mode" before using the chatter mode.

1. To chatter the solenoid for the purpose of locating the valve from the clock, turn the clock off and switch the Pro48 to OFF mode.
2. TURN OFF THE WATER to irrigation system.
3. Disconnect both the station and common wire from the controller.
4. Connect the Pro48 by attaching the red lead to the station wire and the black lead to the common.
5. Select side switch to CHATTER and top Switch to SOLENOID mode.
6. Proceed to the field and listen for the chattering sound at the solenoid valve.

Sending Tone

The tone function is used for identifying the termination point of a wire. For the tone function to be useful, a tone probe, like the Pro200, is required. If you purchased the Pro48 separately, a tone probe will need to be purchased as well to use this function.

1. Connect the red lead to the station wire and the black lead to earth ground.
2. Place the top switch to the SEND TONE mode.
3. Proceed to opposite end of wire and trace the tone the Pro200 Series inductive amplifier. Reception of the tone is strongest on the subject wire.

Inductive Probe

The Inductive or tone probe included in the Pro48K kit is used to receive the tone signal (it is not included if you purchased just the Pro48). To use, simply install a 9v battery inside the battery compartment, being careful to match polarities on the battery and the probe. Close the battery case and replace the screw.

The volume control is located on the top of the probe. Adjust it to a level appropriate to your surroundings and comfort.

To use, simply depress the on/off switch and hold. Now probe near the wire or wires you are trying to identify. The wire that emits the loudest signal is the one connected to the Pro48.

Specifications

Electrical

Minimum Voltage for Clock LED is 18 Vac. Minimum Battery while Testing is 15 Vdc.

Maximum Input Voltage Between Test Leads is 28 Vac. Solenoid Circuit Recharge Time is 0.5 sec

Peak output voltage is 36 Vdc.

Maximum distance range for one Solenoid (**depending on battery condition**):

12 AWG Loop . 3000-13000 feet

14 AWG Loop . . 2000-8500 feet

18 AWG Loop 500-3000 feet

Physical

Length 160 mm (6.0")

Width 80 mm (3.0")

Depth 35 mm (1.5")

Weight 0.27 kg (9.6 oz)

Operating/Storage Conditions

Temperature:

Celsius 0° C to 50° C

Fahrenheit 32° F to 122° F

Maintenance

Battery Replacement

WARNING – BEFORE REPLACING BATTERIES, BE SURE THE PRO48 IS OFF AND NOT CONNECTED TO A VOLTAGE SOURCE.

1. Turn the Pro48 off.
2. Disconnect the Pro48 from any power source.
3. Remove the battery cover.
4. Replace the batteries (observe polarity, **use alkalines**).
5. Replace the battery cover.

One-Year Limited Warranty

Armada Technologies warrants the Pro48 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 of the Pro48 is not covered by warranty and is determined at the sole discretion of Armada Inc.

For all test instrument repairs, you must first request a Return Material Authorization Number (RMA) by contacting Armada at (616) 536-2038 or if international, through your local dealer at www.Armadatech.com.

This RMA number must be clearly marked on the shipping label.
Ship units Freight Prepaid to:

Armada Technologies
10701 Whispering Waters

Caledonia, MI 49316

Note: Prior to returning any test instrument, please check to make sure batteries are fully charged. The biggest reason for test failure is bad batteries. Additionally, it requires a significant amount of battery power to activate solenoids. Consequently, battery drain is relatively rapid and therefore battery life relatively short (approx. 2-3 hours).

Armada Technologies
Telephone: 1 616-536-2038
Facsimile: 1 616-536-2039
www.Armadatech.com