APPLICATION NOTE

July 2020

READING Pro400 TEST RESULTS ON IRRIGATION CABLES

The Pro400 TDR Cable Fault Locator is a radar that works on cables. A lightweight hand-held unit, the Pro400 is used to send a 'ping' down the wires in a cable and show the echoes that come back. This allows users to find faults and junctions in a cable, and the distance to them.

BASICS

The Pro400 comes with a clip-lead test cord that is used to attach to two wires in the cable being tested. In jacketed multi-wire irrigation cables the leads connect to the Common and Station wires, which have been disconnected from the clock. In a 2-wire system they connect to the two wires in the field cable. A tap on the down arrow button causes a ping and the resulting echo trace is shown on the LCD display. The left and right keys move a distance cursor on the display to show how far you are from any point on the echo trace.

Figure 1 shows the area of the display that contains the echo trace. In this case the display shows an open circuit at 50 feet down the cable. The distance accuracy is dependent on the cable correction factor "Vp" which is typically something like 65%.

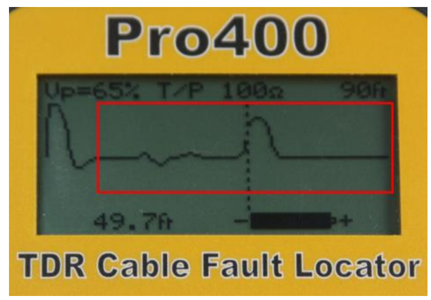

Figure 1 - The Echo Trace on the Display

EXAMPLE ECHO TRACES

These screen samples are done on a demo cable, so distances are short. The Pro400 is capable of spotting cable faults a mile away, depending on how many splices and other faults are on the cable.

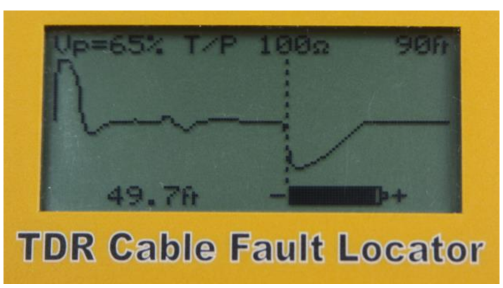

Figure 4 - A Short Circuit at 50 Feet, Splice Visible at 24 Feet

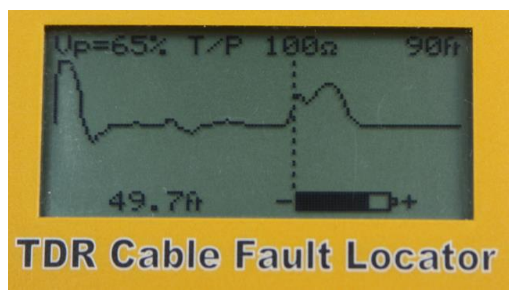

Figure 5 - A Solenoid Spliced onto the Cable End at 50 Feet

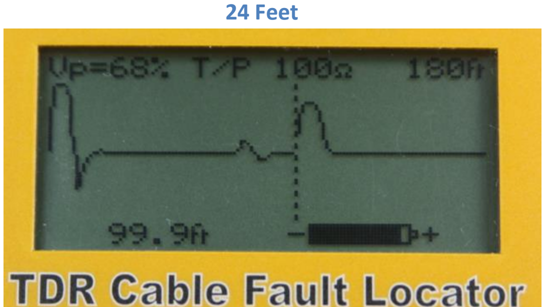

Figure 3 - Cable Open at 100 Feet, Intermediate Splice Visible at 75 Feet

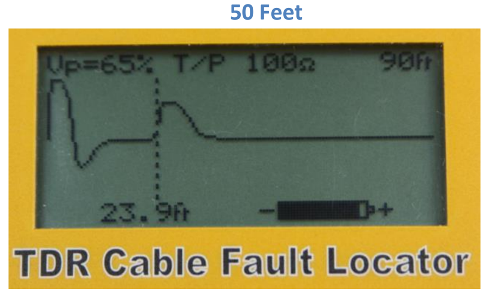

Figure 2 - Open Splice at 24 Feet