

Chroma Systems Solutions, Inc.

19070 Series Panel Meter Application

19071, 19073

Keywords: Digital Panel Meter, Isolation, Overload, DC Hipot Test

Title:

19070 Series Panel Meter Application

Product Family: **19070 Series Hipot Tester**

Definition

A digital panel meter measures and displays all types of processes and electrical variables, such as pressure, fluid levels, flow, temperature, speed, and current and voltage. Some digital panel meters are incorporated into another instrument or employed as part of a test system.

Digital panel meters can display the measurement in many forms: engineering, scientific, numeric and/or alphanumeric form. Typically, for a digital multi-meter (DMM) the display is a simple 4-6 digit LED numeric value. On some models, it is possible to have a (+) or (-) sign indicating direction of current.

There are two electrical safety hipot tests performed on a digital panel meter: **isolation** and **overload**.

Isolation tests determine if there is adequate isolation between the input signal and power signal as well as isolation between the individual input power lines. A common isolation hipot test puts a 2kV output across the input and AC power line terminals for a 1-minute duration. The common mode voltage isolation between ground and the AC power line also uses a 2kV rms signal.

Overload tests determine the strength of the signal the panel meter can withstand. Although a panel meter usually encounters a low voltage signal at the input terminals, a short in external circuitry or a misdirected signal could cause high voltage to be applied to these terminals. Therefore the meter is subjected to an overload hipot test using a 250V DC continuous signal.

DC Hipot Test

Table 1 lists the terminal connections for the isolation and overload tests

Table 1: Terminal Connections

Terminal	Isolation Test	Overload Test
AC Line – Signal Input	AC Line HIGH – Signal Input (+)	
	AC Line LOW – Signal Input (+)	
	AC Line GND – Signal Input (+)	
	AC Line HIGH – Signal Input (-)	
	AC Line LOW – Signal Input (-)	
	AC Line GND – Signal Input (-)	
AC Line	AC Line HIGH – AC Line LOW	
	AC Line LOW – AC Line GND	
Signal Input		Signal Input (+) – Signal Input (-)

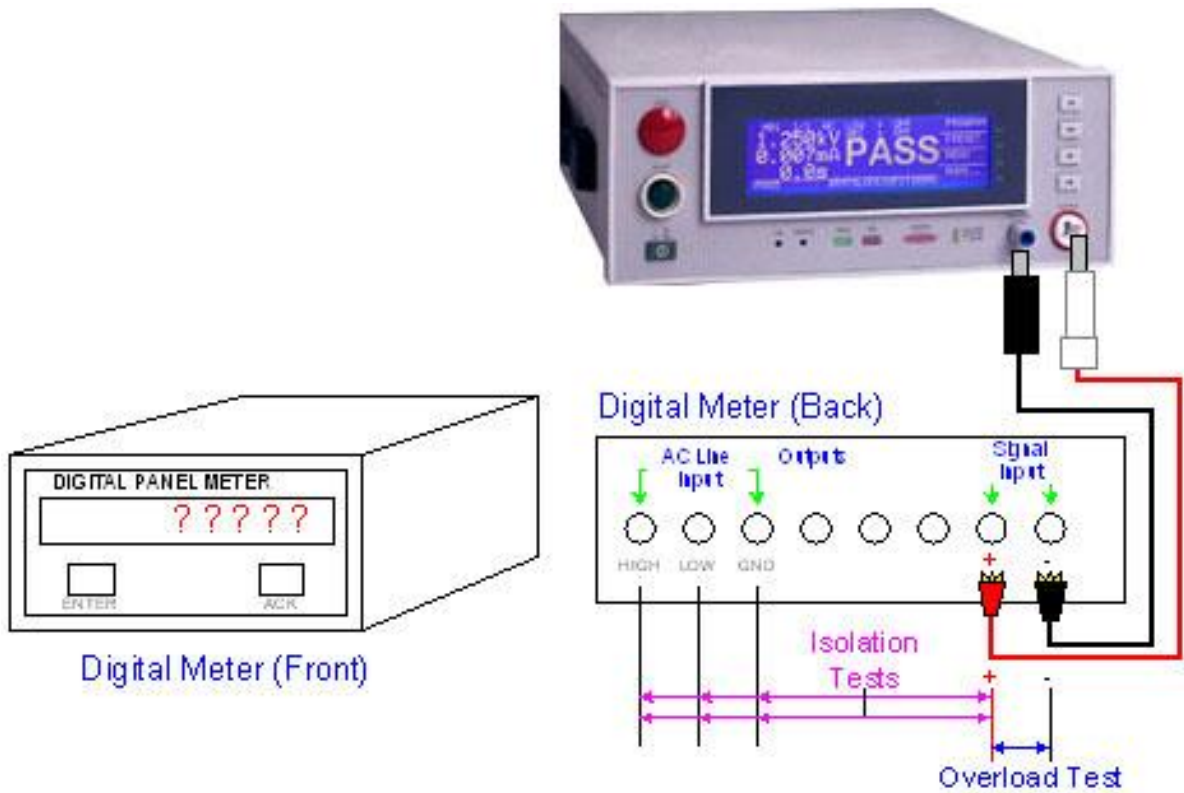


Figure 1: Test Setup with 19070 AC/DC/IR Hipot Tester

