

Temperature Chamber Interface (TCI)

V1.0 - April 6, 2010

Disclaimer

Information in this document is subject to change without notice.
762 Peach Creek Cut Off Road, College Station, TX 77845.

Application Notes - Temperature Chamber Interface

V1.0 - April 6, 2010

GENERAL DESCRIPTION

Arbin provides system and software interface to third-party temperature chambers for customers needing temperature-controlled testing environment. The auxiliary TCI can support commercially available third-party temperature chamber controllers that are powered with RS-232 serial communication. The following supported chambers have been successfully tested to operate together with Arbin testing system using Arbin testing software. Custom configuration is available for other temperature chamber models with RS232 serial communication.

Supported Controllers:

■ Watlow F4, 96, and 942 Series Controller

Supported Chambers:

Cincinnati Sub Zero™

TestEquity®

Espec™

■ ESPEC SCP220 Controller

Supported Chamber:

Espec™

■ R/S (Advanced Model) 89000-10 & 89000-15 Temperature Controller

Supported Chamber:

Cole Parmer®



Communications Connection with Temperature Chamber

The communication interface between the temperature chamber and Arbin system is facilitated through RS232 serial communication cable. Figure 1 below shows the general communications layout of the test chambers and Arbin testing system. One TCI auxiliary module can interface with up to two temperature chambers. The chambers are operated through the MITS Pro software as described on the next page.

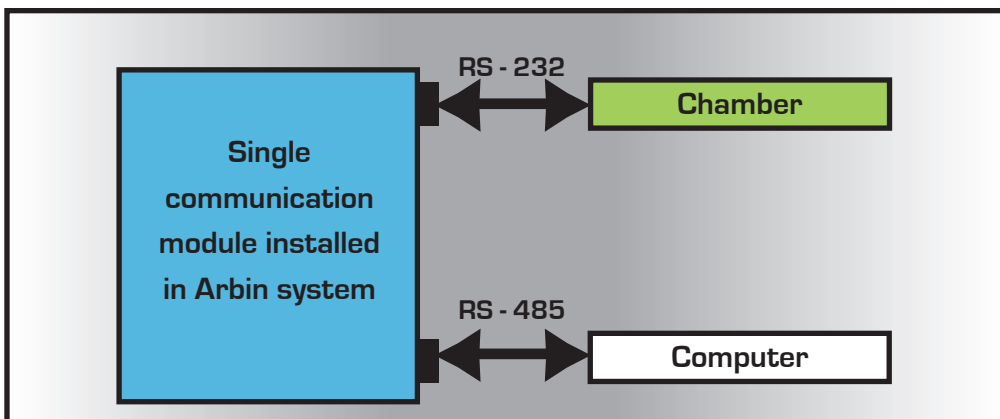


Figure 1.0 Layout of temperature chamber communication interface.

Temperature Chamber Operation with MITS Pro Software

The user operates the temperature chamber using Arbin MITS Pro testing software. The software allows the user to run and stop the chamber operation, as well as program, set, read, and record the chamber's operating temperatures according to set test schedule. The operator can simulate dynamic temperature operating conditions through each step in a test schedule. The software takes the control of starting and stopping each step according to the programmed test schedule. Figure 2 below shows the configuration screen of initial setup. Figure 3 and 4 show the software screens where the operator programs the test settings/conditions and test steps to create a test schedule. Figure 5 shows the assignment of particular test schedule to the I/V channel. Minimal manual work is involved in this automated testing operation.

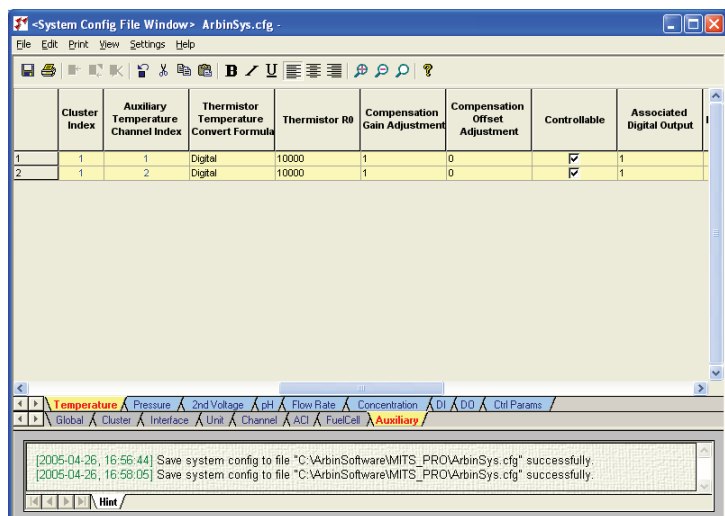


Figure 2 Configuring the auxiliary temperature-chamber setup.

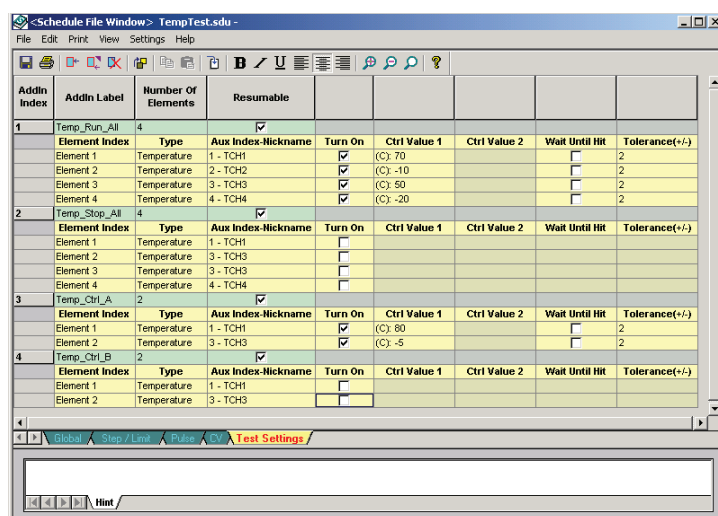


Figure 3 Programming test settings in MITS Pro software.

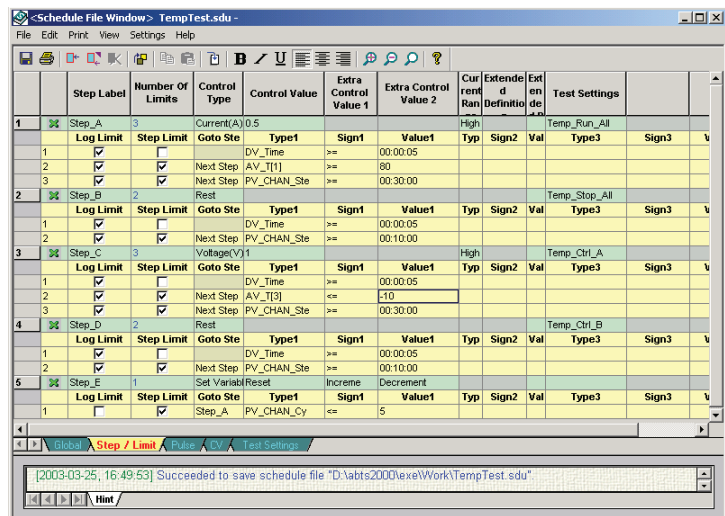


Figure 4 Programming test steps (test sequence) by calling upon pre-programmed test settings to create a test schedule.

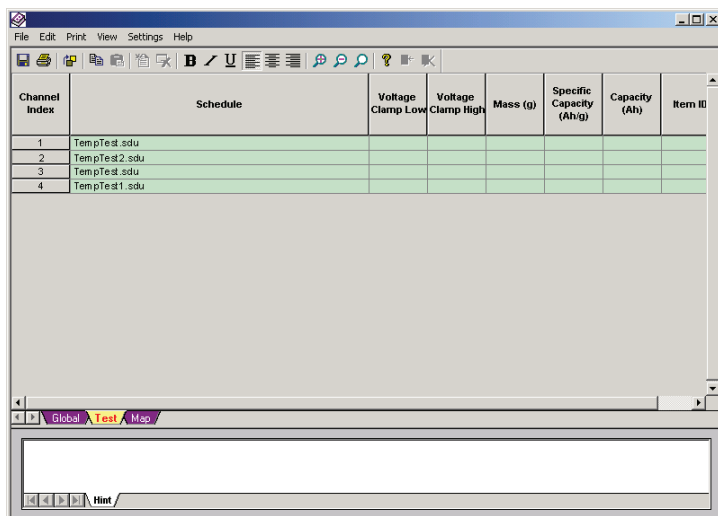


Figure 5. Assigning programmed test schedule to each main I/V channel of the test system.