Instructions Sheet

TVB-2
Test Verification Box

Models
TVB-2

Item 39372 ***Ver 1.03***

13860 West Laurel Drive
Lake Forest, Illinois, 60045
U.S.A.
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DECLARATION OF CONFORMITY

Manufacturer: Associated Research, Inc.

Address: 13860 W. Laurel Dr.
Lake Forest, IL 60045 USA

Product Name: Verification Load Box

Model Number: TVB-2

Conforms to the following Standards:

Safety: IEC 61010-1:2010
EN 61010-1:2010
UL 61010-1:2012
CAN/CSA-22.2 NO. 61010-1-12

EMC: EN 61326-1:2006, EN 61326-2-2:2006
(EN 61000-4-2:2008)

Supplementary Information

*The product herewith complies with the requirements of the **Low Voltage Directive 2006/95/EC** and the **EMC Directive 2004/108/EC**.*

The technical file and other documentation are on file with Associated Research, Inc.

Joseph Guerriero
Vice President / General Manager
Associated Research, Inc.
Lake Forest, Illinois USA
June, 2013

TVB-2 Technical Specifications

MODEL	**TVB-2**	
Components	**Resistor Specification**	
120kΩ	2.5KVac / 50W / 1% +/- 50ppm	
1MΩ	3KVdc / 3W / 1% +/- 50ppm	
0.5Ω	350Vdc / 2W / 5% +/- 300ppm	
49mΩ	100Vdc / 50W / 1% +/- 50ppm	
100mΩ	100Vdc / 25W / 1% +/- 100ppm	
GENERAL		
Test Points	**Test Condition**	**Specification**
PASS ACW/DCW 2MΩ / 6W	1. ACW: 1240V, 10mA or DCW: 2121V, 5000uA 2. Maximum Voltage 2500V 3. Test duty cycle, OFF time = ON time x 2 4. Maximum ON time limit 30 seconds 5. Recommended 2s ramp time	2%
FAIL ACW/DCW 120kΩ / 50W	1. ACW: 1240V, 10mA or DCW: 2121V, 5000uA 2. Maximum Voltage 2300V 3. Test duty cycle, OFF time = ON time x 8 4. Maximum ON time limit 5 seconds 5. Recommended 2s ramp time	2%
PASS IR 4MΩ / 12W	1. IR: 500V, 2MΩ 2. Maximum Voltage: 2500V	2%
FAIL IR 1MΩ / 3W	1. IR: 500V, 2MΩ 2. Maximum Voltage 1000V	2%
PASS GC 0.5Ω / 2W	1. GC: 0.1A, 1Ω 2.Maximum Current 1A	5%
FAIL GC 2Ω / 8W		5%
PASS GB 50mΩ / 50W	1. GB: ≤ 30A, 100mΩ 2. Maximum Current 30A 3. Test duty cycle, OFF time = ON time x 6 4. Maximum ON time limit 5 seconds 5. Maximum resistance range at 30A is 200mΩ[1]	5%
FAIL GB 200mΩ / 50W	1. Test Current 15A 2. Test duty cycle, OFF time=ON time x 6 3. Maximum ON time limit 10 seconds 4. Maximum resistance range at 30A is 200mΩ[1]	3%
Environment	32° F - 104° F (0° - 40° C)	
Dimensions	7.3" (W) x 5.75" (L) x 2.95" (H) , 186mm x 146mm x 75 mm	
Weight	1.55 lbs	

[1]**Note:** if the resistance is greater than 200mΩ you must reduce the test current to 10A in order to display the actual resistance reading.

Note: si la résistance est supérieure à 200mΩ vous devez réduire le courant de test par 10A afin d'afficher la valeur de la résistance réelle.

Symbols Explanation:

Please refer to the instruction manual for specific warning or caution information to avoid personal injury or damage to the product.

S'il vous plaît se référer au manuel d'instructions de mise en garde ou information sur la prudence pour éviter des blessures ou des dommages au produit

To indicate hazardous voltages may be present.

Avertissement des tensions dangereuses qui peuvent être présentes

General Information

The TVB-2 is a go/no-go load box for verifying that the failure detectors of your Associated Research electrical safety testing instrument are functioning properly. Use the TVB-2 daily before you begin performing Hipot, Insulation Resistance, Ground Bond and Ground Continuity tests. The TVB-2 is not intended to comply with any specific safety agency standard.

Note: the trip setting may vary up to 10% of the set value based on the combined tolerances of the instrument and the components used in the TVB-2.

Using the TVB-2

The TVB-2 load box consists of resistors of varying types that induce a PASS or FAIL condition depending on the test parameters that are set in your electrical safety tester. The 8 banana jacks located on the top of the box can be used to apply the corresponding load to the output of your tester. Each banana jack should be used for a particular type of test, which is outlined on the layout of the load box.

To setup a test, connect the high voltage or high current test lead of your electrical safety tester to one of the GC, GB, ACW/DCW, or IR test points. Connect the return lead to the Return point. Ensure that the settings on your electrical safety tester are less than or equal to the maximum recommended voltage, current and duty cycle settings of the TVB-2. When all connections have been made, press the TEST button to begin the test. With the correct settings entered into the electrical safety tester, connecting the output leads to a PASS

terminal should result in a PASS. Connecting the output leads to a FAIL terminal should result in a FAIL.

Note: pay close attention to the maximum voltage and duty cycle limitations of each resistor. Applying voltages that are higher than the recommended maximum setting or duty cycles greater than indicated can cause damage to the TVB-2.

Note: attention à la tension maximale et les limites du cycle de travail de chaque résistance. L'application de tensions plus élevées que le réglage maximum recommandé ou cycles de travail supérieures à celles indiquées peut causer des dommages à la TVB-2

Recommended Test Parameter Conditions

The follwoing table illustrates the resistor values and recommended test parameter settings for each type of test. Pay close attention to the duty cycle limitations in the specifications in order to avoid damaging the TVB-2 load box.

	ACW	DCW	IR	GC	GB
PASS	2MΩ	2MΩ	4MΩ	500mΩ	50mΩ
FAIL	120kΩ	120kΩ	1MΩ	2Ω	200mΩ
Instrument Settings	1240V 10mA	2121V 5000uA	500V 2MOhm	1Ω	30A 100mΩ
Ramp	2s	2s	N/A	N/A	N/A

WARNING:
The test voltages and currents which can cause harmful or fatal electric shock. To prevent accidental injury or death, these safety procedures must be strictly observed when handling and using the test instrument.

Les tensions et les courants qui peuvent causer des chocs électriques dangereux ou fatal. Pour éviter les blessures accidentelles ou la mort, ces procédures de sécurité doivent être strictement observées lors de la manipulation et l'utilisation de l'instrument de test

Not rated for measurements within MEASUREMENT CATEGORIES II, III, or IV

N’est pas classé pour les catégories de surtension II, III ou IV

DO NOT TOUCH WHEN TESTING OR AFTER A MALFUNCTION HAS OCCURRED.

NE TOUCHEZ PAS LORS DE L'ESSAI OU APRÈS UN DYSFONCTIONNEMENT DU PRODUIT

CAUTION: Never connect TVB-2 to any mains circuit directly

ATTENTION: Ne jamais connecter directement le TVB-2 à un circuit d'alimentation.

MAINTENANCE:
To prevent electric shock do not remove the instrument cover. There are no user serviceable parts inside. Routine maintenance or cleaning of internal parts is not necessary. Any external cleaning should be done with a clean dry or slightly damp cloth. Avoid the use of cleaning agents or chemicals to prevent damage plastic parts or lettering.

ENTRETIEN:
Pour éviter les chocs électriques ne pas enlever le couvercle de l'instrument. Il n'y a aucune pièce reparable par l'utilisateur. L'entretien de routine ou le nettoyage des pièces internes ne sont pas nécessaires. Tout nettoyage externe doit être fait avec un chiffon sec ou légèrement humide. Éviter l'utilisation de produits de nettoyage ou des produits chimiques pour éviter d'effacer les lettres ou d'abimer les pièces en plastique.

OPERATING ENVIRONMENT:
This instrument may be operated in environments with the following limits:
- Indoor Use Only
- Altitude: 2000 m
- Temperature: 0ºC to 40ºC
- Humidity: Maximum 80% RH at 31ºC decreasing to 50% RH at 40ºC
- Pollution Degree: 2

Options

Opt. 01 Test Line Cord (p/n 39514)

This optional cable will have the US male plug on one end and high voltage alligator clips on the other end. This cable is **not** to be plugged directly into a wall outlet. It will be plugged into the Associated Research adapter box p/n 38578. The shorted Line and Neutral are shorted only for ACW, DCW and IR test verification with the TVB-2.

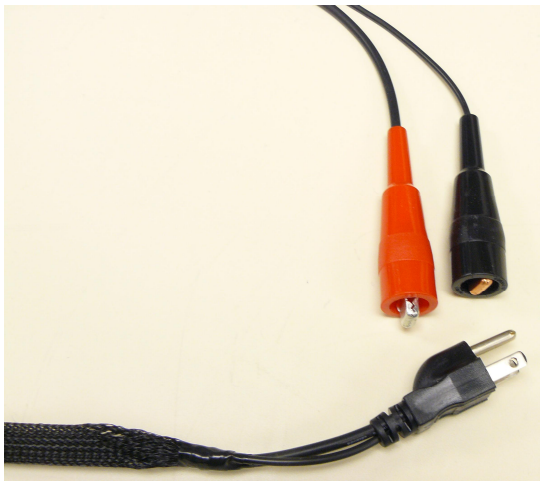

Figure 1 Line Cord