MWA300 Quick Start Guide

Megger

Read the MWA300 manual before operating equipment.
This guide is not meant to replace manual.

HIGH-VOLTAGE EQUIPMENT!

Safety is the responsibility of the user

Only qualified and trained personnel should operate the MWA300. Operator must read and understand this entire instruction manual prior to operating the equipment. Operator must follow instruction manual and attend to the equipment while in use. In the event of equipment malfunction, the unit should immediately be de-energized and returned to Megger for repair. The safety precautions herein are not intended to replace your company's safety procedures.

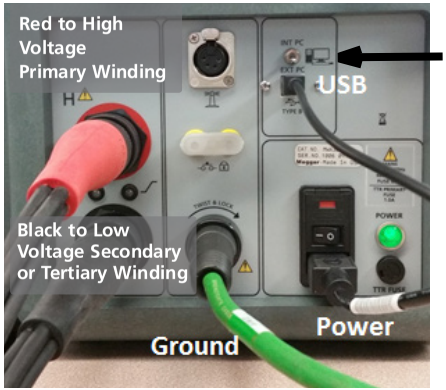
Refer to IEEE 510 - 1983, "IEEE Recommended Practices for Safety in High-Voltage and High-Power Testing" for additional information.

1 Connect Leads / Power / Ground

Before



After

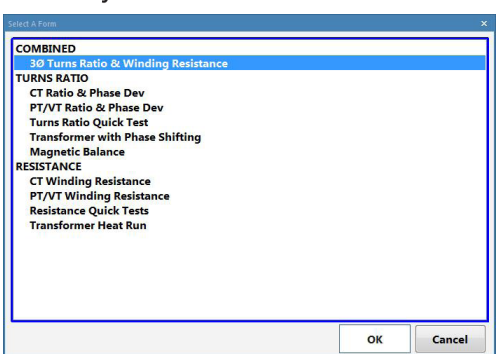


Megger

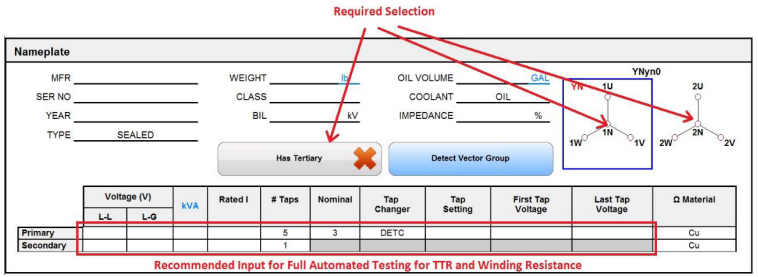
2 Turn Instrument On, select MWA from instrument list on PowerDB which brings up "Select a Form" box.



3 Select 3Ø Turns Ratio & Winding Resistance form. This guide uses this form as an example. Allow 30-60 seconds for PC to communicate with Instrument. See manual for any PC connection issues.

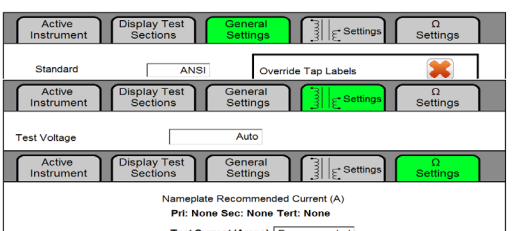


4 Fill out Nameplate information (minimum info listed below)



5 Input Desired Test Settings





6 At this stage, connect Test leads to transformer under test. Note color coding and marking on leads. Match to transformer bushing markings.

Megger

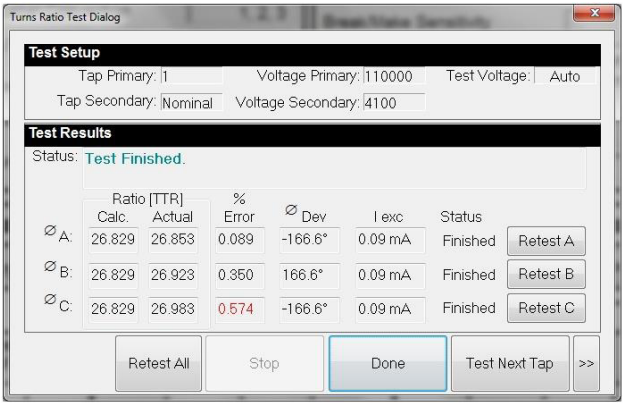
7 Select and start the Ratio (TTR) Test by depressing # below. Testing will follow Nameplate input from 4) above:

Turns Ratio - Primary Taps to Secondary Nominal

#	Tap Pri/Sec		Voltage Pri/Sec		Test V	Calc TTR	$H_1 - H_0 / X_1 - X_0$ Actual TTR	% Error	I exc mA	Phase (Deg)	$H_2 - H_0 / X_2 - X_0$ Actual TTR	% Error	I exc mA	Phase (Deg)	$H_3 - H_0 / X_3 - X_0$ Actual TTR	% Error	I exc mA	Phase (Deg)
1	1	Nominal	121,500	35,500		3.423												
2	2	Nominal	124,200	35,500		3.499												
3	3	Nominal	126,900	35,500		3.575												
4	4	Nominal	129,600	35,500		3.651												
5	5	Nominal	132,300	35,500		3.727												

Voltages from optional input in 4) above

8 Test dialog appears once test begins:



9 Winding Resistance Test –depress # to test all 3Ø's for tap or depress highlighted box to begin testing individual phase:

Resistance - Primary

Graph

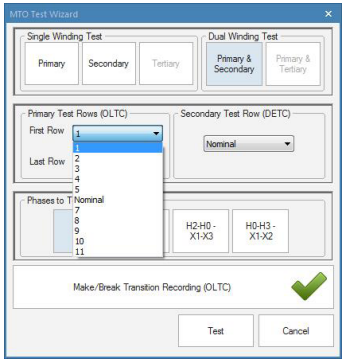
Read Last Test | Make/Break

Resistance Test Wizard

Test Current (A) / Stability (%/Digit) | Measured Resistance | Units: mΩ

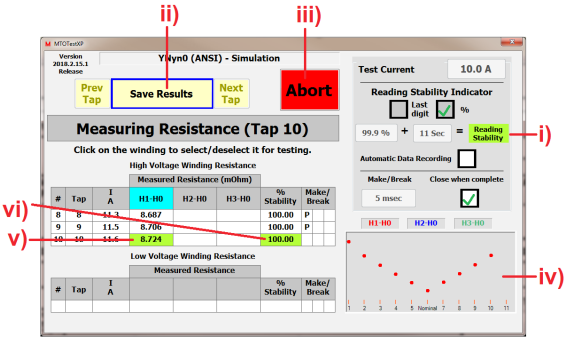
#	Tap	$H_1 - H_0$		$H_2 - H_0$		$H_3 - H_0$		Winding Diff Max: 2 %	Make/Break			
14	1	10.0768 / 100.000	10.20	10.0768 / 100.000	10.23	10.0768 / 100.000	10.25	0.445	5 ms	Pass	Pass	Pass
15	2	10.3813 / 100.000	9.755	10.3046 / 100.000	9.852	10.2790 / 100.000	9.896	1.435	5 ms	Pass	Pass	Pass
16	3	10.5347 / 100.000	9.466	10.4569 / 100.000	9.561	10.4309 / 100.000	9.603	1.433	5 ms	Pass	Pass	Pass

10 For automated winding resistance testing, MTO Test Wizard can be used if all critical nameplate information is filled in from step 4) above.



Megger

11 Once test begins to run for any resistance, following screen will appear:



Controls are as follows:

i) Test Setup: allows changes to test parameters, which can be seen in step 4 above (and described in section iv below). This button is 'greyed out' once testing begins or MTO instrument connection is not established.

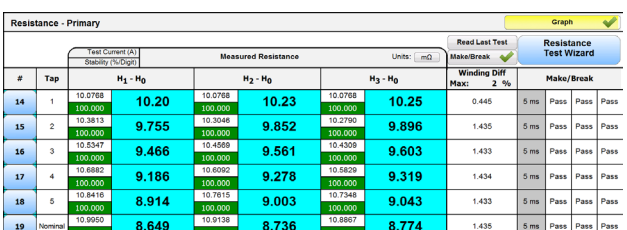
ii) Test Mode: enables various testing to Start, Continue, Save Results etc. as testing is conducted. This button guides operator through testing, providing instruction for next steps.

iii) Abort/Exit: allows disruption of test and/or exiting once test is concluded.

iv) Results Graph: plots resistance results for diagnostic review. This is useful in determining that each past result is following an expected pattern. Different OLTC tap changers develop different shaped patterns such as V, Saw Tooth, Slope curves. Familiarity with these tap changers helps improve diagnostic capability.

v & vi) Measured Resistance: result with color background changes using "Reading Stability + Time for stable reading" setting as shown in section iv above. When condition is reached, background turns green.

12 Once all tests are complete and this window closes, results will appear on test form:



#	Tap	H1 - H0		H2 - H0		H3 - H0		Winding Diff	Make/Break			
14	1	10.0768 / 100.000	10.20	10.0768 / 100.000	10.23	10.0768 / 100.000	10.25	0.445	5 ms	Pass	Pass	Pass
15	2	10.3813 / 100.000	9.755	10.3046 / 100.000	9.852	10.2790 / 100.000	9.896	1.435	5 ms	Pass	Pass	Pass
16	3	10.5347 / 100.000	9.466	10.4589 / 100.000	9.561	10.4309 / 100.000	9.603	1.433	5 ms	Pass	Pass	Pass
17	4	10.6882 / 100.000	9.186	10.6092 / 100.000	9.278	10.5829 / 100.000	9.319	1.434	5 ms	Pass	Pass	Pass
18	5	10.8416 / 100.000	8.914	10.7615 / 100.000	9.003	10.7348 / 100.000	9.043	1.433	5 ms	Pass	Pass	Pass
19	Nominal	10.9950 / 100.000	8.649	10.9138 / 100.000	8.736	10.8867 / 100.000	8.774	1.435	5 ms	Pass	Pass	Pass

13 Saving Results – once test is completed, form will prompt to save result. After name is entered, results are automatically saved as each test is completed.

