



Vebko Amirkabir Co.

**AMT 105
205**



Relay Tester AMT

List of Contents

- ▶ History of Vebko Amirkabir
- ▶ Capabilities of AMT Relay Tester
- ▶ Brief List of Specifications
- ▶ List of Clients
- ▶ Certificates , Testimonials & Vendor List of Petroleum Ministry of Iran
- ▶ Contact Information

History of Vebko Amirkabir

Vebko is a science-based company, established in 2014 by order of the science and technology vice-president of Iran to manufacture national relay tester device under the supervision of Amirkabir university of technology. The first industrial product of this company entered the market in 2015 and so far, more than 850 relay tester devices were sold to important industrial centers of electricity , oil and gas as well as some universities.

AMT is a universal solution to testing all types of relays and protective equipment, circuit breakers, thermal cables and sensors as well as power, current, voltage and capacitor-voltage transformers. Because of these features, this device is capable of testing different kinds of relays and protective equipment.

AMT 205 Six 32A current (64A in three-phase mode, 128A in single-phase mode), In less than 300 milliseconds, there is a three-phase current of 70A and a single-phase current of 200A.

six 300V voltage sources (1200V in single-phase mode), current and voltage combination cable, 8 analog binary inputs, 2 DC analog current and voltage inputs with high accuracy, 4 binary outputs, DC voltage Source (420 V).

AMT 105 Six 32A current (64A in three-phase mode, 128A in single-phase mode), four 150V voltage sources (450V in single-phase mode), current and voltage combination cable, 8 analog binary inputs, 2 DC analog current and voltage inputs with high accuracy, 4 binary outputs, DC voltage Source (212 V).

Certificates & Testimonials

Certified by

- ▶ Iran Power Grid Management
- ▶ Tavanir Co.
- ▶ Niroo Reaearch institute
- ▶ IMIDRO
- ▶ Thermal Power Plants Holding
- ▶ Sanjesh koosha



Certificate related to calibration and certification of Vebko Community

CE Certificate obtained from IMQ

AVL List

- ▶ Khorasan Steel Complex Co.
- ▶ Khozestan Oxin Steel Co.
- ▶ Marun Petrochemical Co.
- ▶ Khouzestan Steel Co.
- ▶ Hormozgan Steel Co.
- ▶ Pasdargad Oil Co.
- ▶ Qom Combined Cycle Co.
- ▶ Pars Oil and Gas Co.
- ▶ National Iranian Copper Industry Co.
- ▶ Provider Members of Niroo Research Institute
- ▶ Petroleum Vendor List Iranian
- ▶ Khorasan Petrochemical Co.
- ▶ Bandar Abbas Oil Refining Co.
- ▶ Zarand Iranian Steel Co.

Relay Tester AMT

Capabilities of AMT

Software Specifications

1. Capable of testing a wide range of static, electromechanical & numerical relays
2. Capable of reading, editing & creating all XRio & Rio files
3. Capable of transient testing
4. Capable of point-to-point or end-to-end testing
5. Built-in GPS & Wi-Fi Modules
6. Automatically performing tests
7. Comprehensive report of tests
8. Capable of automatically filling out the test sheets of different companies
9. Compatible with Windows XP, 8, 10, 11
10. Supporting Android & iOS apps
11. Autosave, redo & undo options
12. Manual HTML file in Persian , English , Germany , Spanish
13. Using bootloader technology to update firmware
14. A host of training videos

Capable of testing power transformers

1. Winding resistance
2. No-Load current
3. Magnetic balance
4. Tap Changer continuity
5. Ratio (TTR)
6. Vector group
7. Demagnetizing
8. Leakage reactance

Capable of testing current transformers (CT)

1. Excitation (Saturation)
2. Hysteresis curve
3. Ratio using current or voltage
4. Polarity using current or voltage
5. Phase error
6. Winding resistance
7. Secondary burden

Capable of testing transducers & Meters

1. Highly precise in testing transducers & meters
2. Equipped with a pulse counter to automatically read energy

Capable of testing VT/CVT

1. Ratio & Polarity
2. Winding resistance
3. Short Circuit impedance
4. Excitation

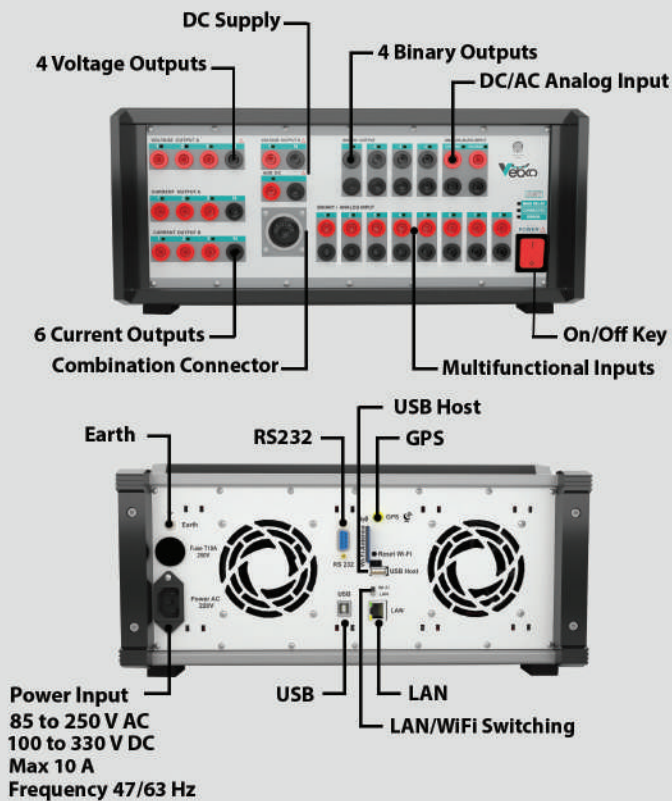
Capable of testing circuit breakers (CB) & sectioners

1. Testing the opening & closing time
2. Contact resistance
3. Minimum voltage to operate CB test

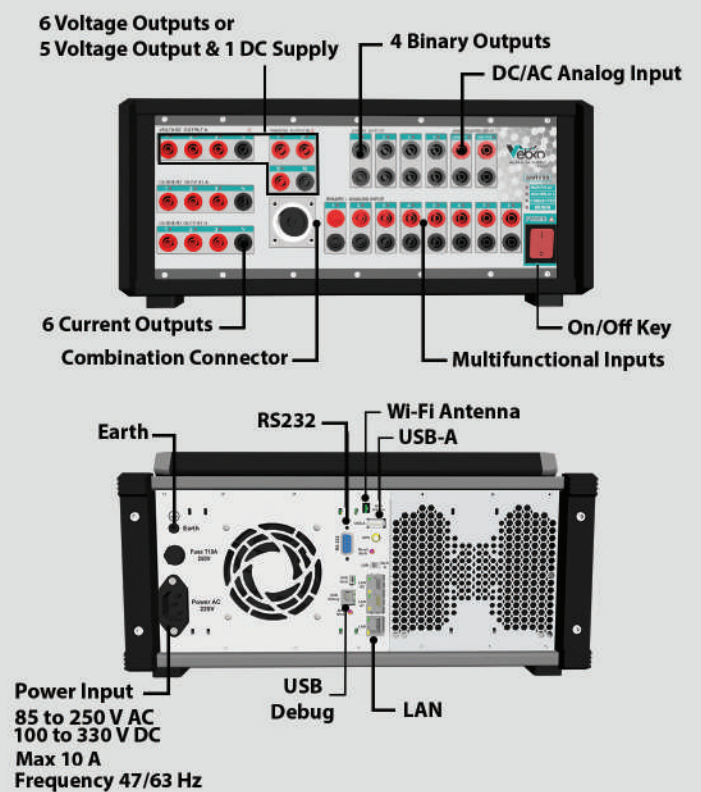
Relay Tester AMT

Tester Hardware Features

AMT105



AMT205



A summary of electrical & physical characteristics of the device

Power Supply AMT105

Power supply range	85-250 VAC or 100-330VDC
Input frequency range	0-100 Hz
Consumption	up to 2 KVA
Nominal current	3 A at 230 VAC
Connection	According to IEC60320

High Voltage, Low Current Generators AMT105 (Input Voltage \geq 220V)

Voltage	4 Phase (L-N)	AC: 4 X 0 ... 150 V DC: 4 X 0 ... 210 V
	Series and parallel	Yes
	Resolution	400 μ V
	Accuracy	Guar.: 0.15% of rd. + 0.015% of rg. Typ.: 0.05% of rd. + 0.005% of rg.

Current No

Power Supply AMT205

Power supply range	85-250 VAC or 100-330VDC
Input frequency range	0-100 Hz
Consumption	up to 3 KVA
Nominal current	3 A at 230 VAC
Connection	According to IEC60320

High Voltage, Low Current Generators AMT205 (Input Voltage \geq 220V)

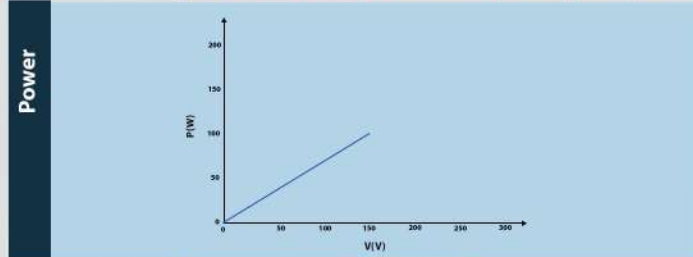
Voltage	6 Phase (L-N)	AC: 6 X 0 ... 300 V DC: 6 X 0 ... 420 V
	Series and parallel	Yes
	Resolution	800 μ V
	Accuracy	Guar.: 0.15% of rd. + 0.015% of rg. Typ.: 0.05% of rd. + 0.005% of rg.

Current	Normal Mode	6 Phase (L-N)	AC: 6 X 0 ... 0.25 A DC: 6 X 0 ... 0.4 A
	Internal Booster Mode time < 200ms	6 Phase (L-N)	AC: 6 X 0 ... 0.85 A DC: 6 X 0 ... 1.2 A
	Series and parallel		Yes
	Resolution		20 μ A
	Accuracy		Guar.: 0.15% of rd. + 0.015% of rg. Typ.: 0.05% of rd. + 0.005% of rg.

Relay Tester AMT

(Continue) High Voltage, Low Current Generators AMT105

Phase	Range	0° to 360°
	Resolution	1μ°
	Accuracy	Guar.: 0.1° Typ.: 0.01°
Frequency	Range	0 ... 10 kHz
	Resolution	1 μHz
	Accuracy	Guar.: 10 μHz , Typ.: 1 μHz



Harmonic Injection	Enter Harmonic	Yes	2 Free Harmonic
	Harmonic Order	No	
Recording	Sampling Rate	1.2 ms	
	Variable	Currents and Voltages	
Protection	Detection	Power according to power curves	
	Type	No	
Connection Banana Sockets		4 mm (0.16 in) banana sockets	
Connection Combination Socket		Group A	
LED		Green (1 Color)	

Low Voltage, High Current Generators AMT105

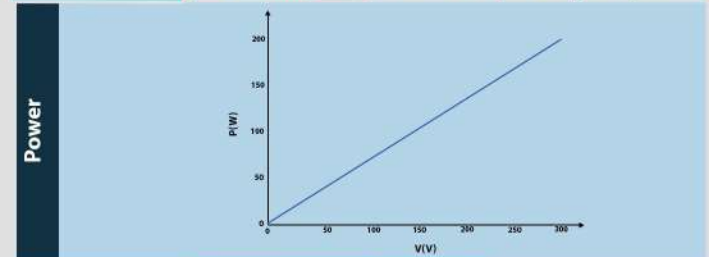
Current	Normal Mode	6 Phase (L-N)	AC: 6 X 0 ... 32 A DC: 6 X 0 ... 32 A
		Resolution	85 μA
		Accuracy	Guar.: 0.15% of rd. + 0.015% of rg. Typ.: 0.05% of rd. + 0.005% of rg.
	Internal Booster Mode		No
	Maximum Compliance Voltage		12V
	Series and parallel		Yes

Voltage	No	
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Phase	Range	0° to 360°
	Resolution	1μ°
	Accuracy	Guar.: 0.1° Typ.: 0.01°
Frequency	Range	0 ... 2.5 kHz
	Resolution	1 μHz
	Accuracy	Guar.: 10 μHz Typ.: 1 μHz

(Continue) High Voltage, Low Current Generators AMT205

Phase	Range	0° to 360°
	Resolution	1μ°
	Accuracy	Guar.: 0.1° Typ.: 0.01°
Frequency	Range	0 ... 5 kHz
	Resolution	1 μHz
	Accuracy	Guar.: 10 μHz , Typ.: 1 μHz



Harmonic Injection	Enter Harmonic	Yes	2 Free Harmonic
	Harmonic Order	Yes	Maximum Order 100 for 50Hz (5KHz)
Recording	Sampling Rate	25 μs	
	Variable	Currents and Voltages	
Protection	Detection	Power according to power curves: Inverse	
	Type	Overcurrent: Instantaneous	
Connection Banana Sockets		4 mm (0.16 in) banana sockets	
Connection Combination Socket		Group A	
LED		RGB (16 Million Color)	

Low Voltage, High Current Generators AMT205

Current	Normal Mode	6 Phase (L-N)	AC: 6 X 0 ... 32 A DC: 6 X 0 ... 45 A
		Resolution	170 μA
		Accuracy	Guar.: 0.15% of rd. + 0.015% of rg. Typ.: 0.05% of rd. + 0.005% of rg.
	Internal Booster Mode time<300ms		6 Phase (L-N) AC: 6 X 0 ... 67 A DC: 6 X 0 ... 95 A
	Maximum Compliance Voltage		22V
	Series and parallel		Yes

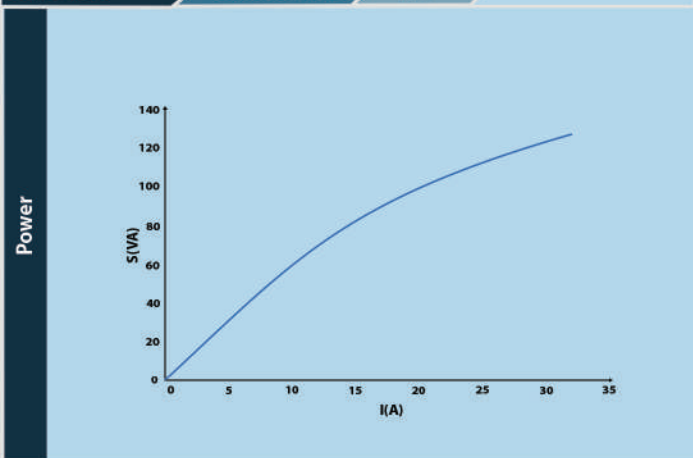
Voltage	6 Phase (L-N)	AC: 6 X 0 ... 12 V DC: 6 X 0 ... 20 V
	Series and parallel	Yes
	Resolution	40 μV
Accuracy		Guar.: 0.15% of rd. + 0.015% of rg. Typ.: 0.05% of rd. + 0.005% of rg.

Phase	Range	0° to 360°
	Resolution	1μ°
	Accuracy	Guar.: 0.1° Typ.: 0.01°
Frequency	Range	0 ... 2.5 kHz
	Resolution	1 μHz
	Accuracy	Guar.: 10 μHz Typ.: 1 μHz

Relay Tester AMT

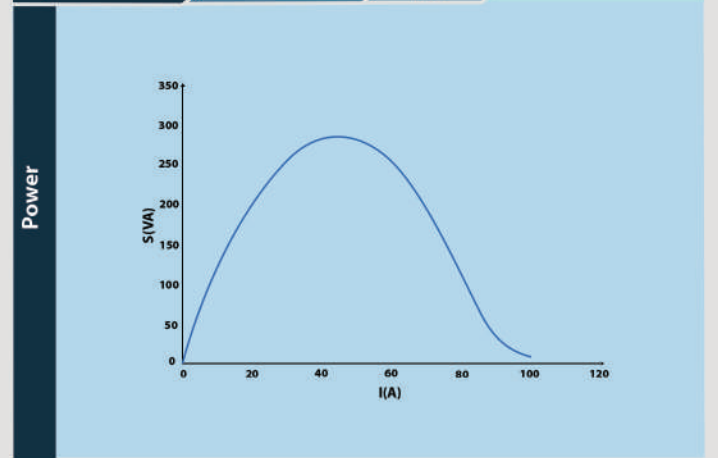
(continue) Low Voltage, High Current Generators AMT105

Recording	Sampling Rate	1.2 ms	
	Variable	Currents	
Protection	Detection	Maximum Neutral Current	32A: Unlimited 64 A: 3 s 100 A: 300 ms
		Setting	Software Controlled: Time , Enable
		Type	Test off
	Connection Banana Sockets	4 mm (0.16 in) banana sockets / 32 A continuously	
Connection Combination Socket	Group A (30 A continuously max)		
LED	Green (1 Color)		
Harmonic Injection	Enter Harmonic	Yes	2 Free Harmonic
	Harmonic Order	No	



(continue) Low Voltage, High Current Generators AMT205

Recording	Sampling Rate	25 μ s	
	Variable	Currents & Voltages	
Protection	Detection	Maximum Neutral Current	32A: Unlimited 64 A: 3 s 100 A: 300 ms
		Setting	Software Controlled: Time , Enable
		Type	Test off
	Connection Banana Sockets	4 mm (0.16 in) banana sockets / 32 A continuously	
Connection Combination Socket	Group A (30 A continuously max)		
LED	RGB (16 Million Color)		
Harmonic Injection	Enter Harmonic	Yes	2 Free Harmonic
	Harmonic Order	Yes	Maximum Order 40 for 50Hz (2KHz)



AC/DC Analog Binary Inputs AMT105

Number	8		
Dry	Open circuit voltage	5 V	
	Short circuit voltage	Software controlled	
Wet	Range 1: 0 ... ± 4.5 V(Peak)	Accuracy	0.05% of rg.
		Resolution	35 μ V
		Impedance	493.75 K Ω
	Range 1: 0 ... ± 30 V(Peak)	Accuracy	0.05% of rg.
		Resolution	250 μ V
		Impedance	414.783 K Ω
	Range 1: 0 ... ± 180 V(Peak)	Accuracy	0.05% of rg.
		Resolution	1.5 mV
		Impedance	405.267 K Ω
No			
Recording	Sampling Rate	400 μ s	
Protection	Detection	Over voltage	
	Setting	Software Controlled: Time , Enable	
	Type	Test off, Change to Dry	
Galvanic Isolation	8 Group (1+1+1+1+1+1+1+1)		
LED	Green (1 Color)		

AC/DC Analog Binary Inputs AMT205

Number	8		
Dry	Open circuit voltage	5 V	
	Short circuit voltage	Software controlled	
Wet	Range 1: 0 ... ± 4.5 V(Peak)	Accuracy	0.05% of rg.
		Resolution	35 μ V
		Impedance	493.75 K Ω
	Range 1: 0 ... ± 30 V(Peak)	Accuracy	0.05% of rg.
		Resolution	250 μ V
		Impedance	414.783 K Ω
	Range 1: 0 ... ± 180 V(Peak)	Accuracy	0.05% of rg.
		Resolution	1.5 mV
		Impedance	405.267 K Ω
Range 1: 0 ... ± 520 V(Peak)	Accuracy	0.05% of rg.	
	Resolution	4 mV	
	Impedance	404.298 K Ω	
Recording	Sampling Rate	12.5 μ s	
Protection	Detection	Over voltage	
	Setting	Software Controlled: Time , Enable	
	Type	Test off, Change to Dry	
Galvanic Isolation	8 Group (1+1+1+1+1+1+1+1)		
LED	RGB (16 Million Color)		

Relay Tester AMT

Binary Outputs AMT105

Type	Electro mechanical relay contacts	
Control	Software controlled	
Number	4	
Maximum Voltage in open mode	Electro Mechanic	750V (Rms)
	No	
Maximum Current	Electro Mechanic	10A (Rms)
	No	
Break Capacity AC	Electro Mechanic	Smax 2500 VA
	No	
Break Capacity DC	Electro Mechanic	Pmax 300 W
	No	
Recording	No	
Protection	No	
Galvanic Isolation	4 Group (1+1+1+1)	
LED	Green (1 Color)	

Binary Outputs AMT205

Type	Electro mechanical relay contacts	
	Transistor	
Control	Software controlled	
Number	4	
Maximum Voltage in open mode	Electro Mechanic	750V (Rms)
	Transistor	50 V
Maximum Current	Electro Mechanic	10A (Rms)
	Transistor	50 mA
Break Capacity AC	Electro Mechanic	Smax 2500 VA
	Transistor	Smax 2.5 VA
Break Capacity DC	Electro Mechanic	Pmax 300 W
	Transistor	Pmax 2.5W
Recording	Sampling Rate	50 us
	Resolution	2 mA
	Accuracy	0.3 mA
Protection	Detection	Over current
	Setting	Software Controlled: Time , Enable
	Type	Test off, Open Relays
Galvanic Isolation	4 Group (1+1+1+1)	
LED	RGB (16 Million Color)	

AC/DC Current Measuring Input AMT105

Range 2: 0 ... ± 800 mA	Accuracy	0.05% of rg.
	Resolution	6 µA
	Shunt	1Ω
Range 3: 0 ... ± 35 mA	No	
Range 1: 0 ... ± 10 A	No	
Range 4: 0 ... ± 250 µA	No	
Recording	Sampling Rate	400 µs
	Detection	Over current
Protection	Setting	Software Controlled: Time , Enable
	Type	Test off
Galvanic Isolation	1 Group	
LED	Green (1 Color)	

AC/DC Current Measuring Input AMT205

Range 2: 0 ... ± 800 mA	Accuracy	0.05% of rg.
	Resolution	6 µA
	Shunt	1Ω
Range 3: 0 ... ± 35 mA	Accuracy	0.05% of rg.
	Resolution	0.3 µA
	Shunt	22Ω
Range 1: 0 ... ± 10 A	Accuracy	0.05% of rg.
	Resolution	1.5mA
	shunt	5mΩ
Range 4: 0 ... ± 82 µA	Accuracy	0.05% of rg.
	Resolution	6 nA
	Shunt	3 KΩ
Recording	Sampling Rate	12.5 µs
	Detection	Over current
Protection	Setting	Software Controlled: Time , Enable
	Type	Test off, Change to open circuit
Galvanic Isolation	1 Group	
LED	RGB (16 Million Color)	

Relay Tester AMT

AC/DC Voltage Measuring Input AMT105

Range 1: 0 ... ±400 mV(Peak)	Accuracy	0.05% of rg.
	Resolution	3 μV
	Impedance	54.7826 KΩ
Range 2: 0 ... ±60 mV(Peak)	No	
Recording	Sampling Rate	400 μs
Protection	Detection	Over Voltage
	Setting	Software Controlled: Time , Enable
	Type	Test off
Galvanic Isolation	1 Group	
LED	Green (1 Color)	

AUX . DC AMT105

Aux . DC	Voltage	0 ... 212 V
	Current	0 ... 0.4 A

GPS AMT105

Internal GPS Module	yes
Accuracy	8ns
Time To Lock	10s
Delay Adjustment	yes

Protocol AMT105

IEC 61850	Goose Message	No
	SV	No

Combination Cable AMT105

3 Voltage, 3 current	Yes
6 Current	Yes

PC connection AMT105

WiFi	Yes
LAN	1 Port
Programming USB port	No

Physical Characteristic AMT105

Weight	13kg
Dimension	35cm*35cm*15cm

AC/DC Voltage Measuring Input AMT205

Range 1: 0 ... ±400 mV(Peak)	Accuracy	0.05% of rg.
	Resolution	3 μV
	Impedance	54.7826 KΩ
Range 2: 0 ... ±60 mV(Peak)	No	
Recording	Sampling Rate	12.5 μs
Protection	Detection	Over Voltage
	Setting	Software Controlled: Time , Enable
	Type	Test off, Change to Range 1
Galvanic Isolation	1 Group	
LED	RGB (16 Million Color)	

AUX . DC AMT205

Aux . DC	Any combination of 12 channels	Max Voltage : 1200 V , 0.4 A Max Current : 8 V , 210 A
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GPS AMT205

Internal GPS Module	yes
Accuracy	8ns
Time To Lock	10s
Delay Adjustment	yes

Protocol AMT205

IEC 61850	Goose Message	yes
	SV	yes

Combination Cable AMT205

3 Voltage, 3 current	Yes
6 Current	No

PC connection AMT205

WiFi	Yes
LAN	3 Port, 2 port in wifi Network
Programming USB port	Yes

Physical Characteristic AMT205

Weight	14kg
Dimension	35cm*35cm*15cm

Relay Tester AMT

Brief List of Specifications

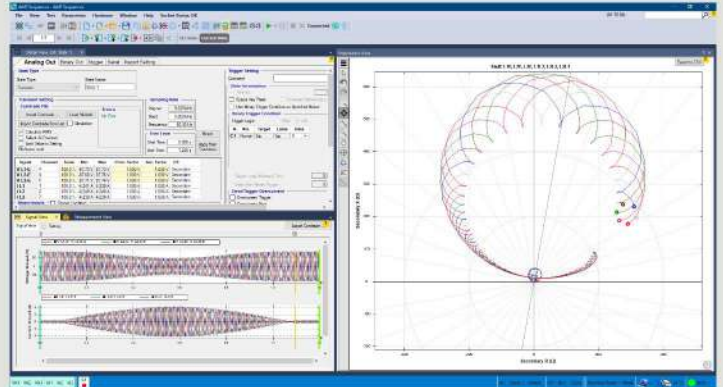
Different Testing Rooms

Home Page of Vebko Software



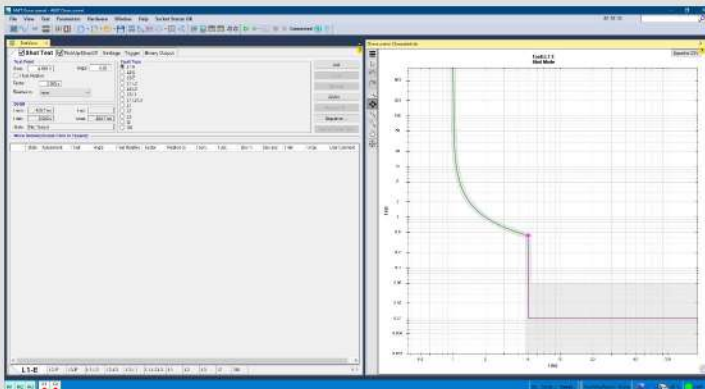
AMT Sequencer

Used to design tests that employ the normal, Quick Step Ramp, Continuous Ramp, Harmonic, Transient



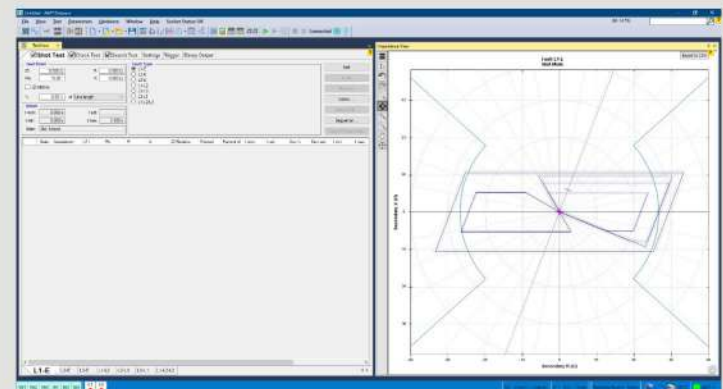
AMT Overcurrent

Used to test current functions like 51/50/67 etc.



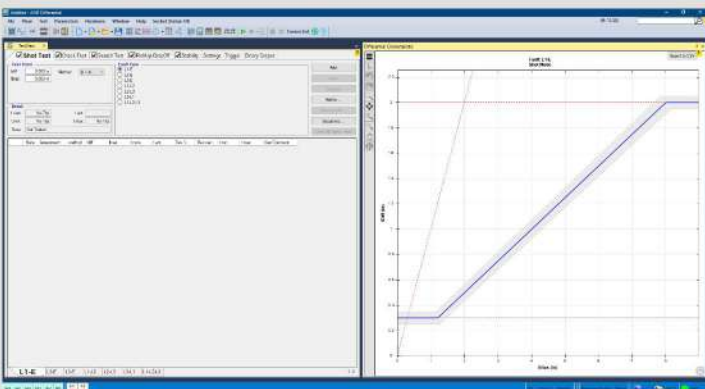
AMT Distance

Used to test Impedance functions



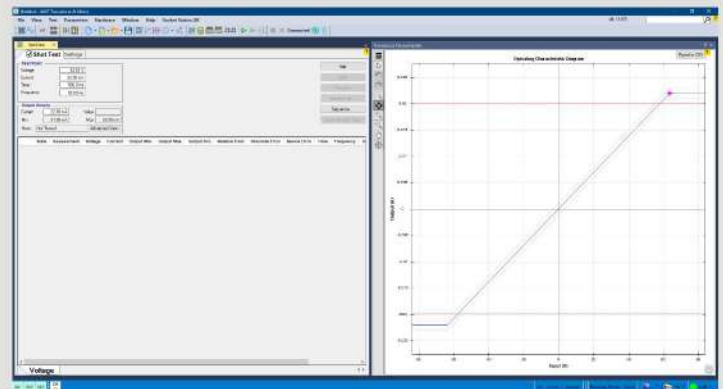
AMT Differential

Used to test differential function



Transducer & Meter

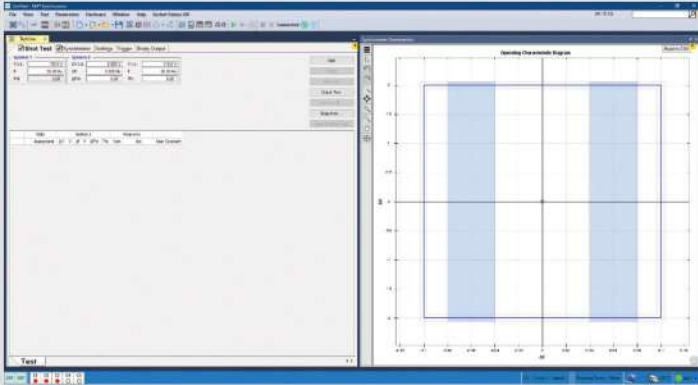
Used to test Transducer & Meter.



Relay Tester AMT

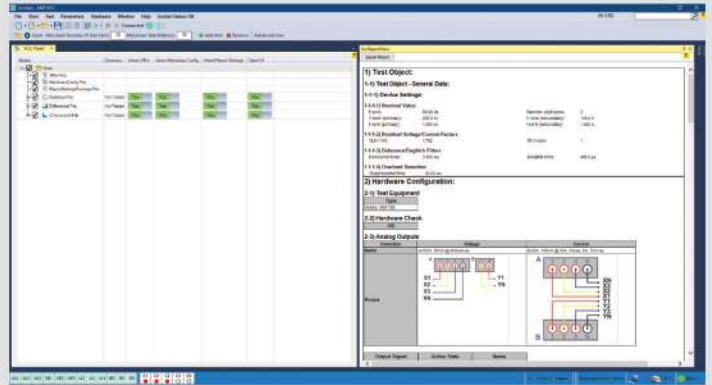
AMT Synchronizer

Used to test synchronizer relay



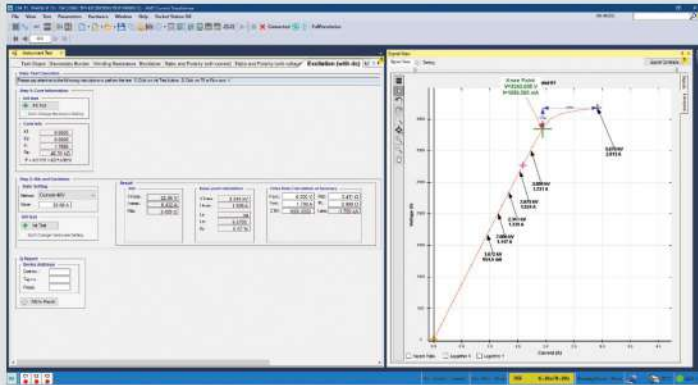
VCC

Used to successively run the tests designed for a relay



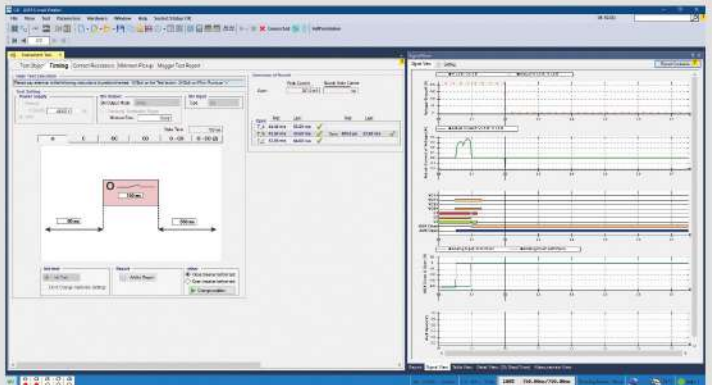
Current Transformer

Used to test various classes of CT.



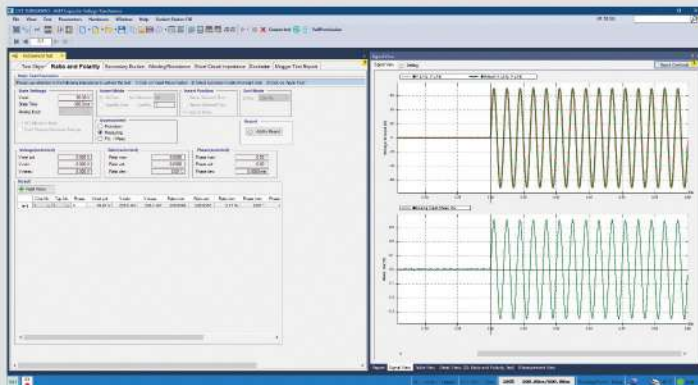
Circuit Breaker

Used to MV & HV circuit breaker tests.



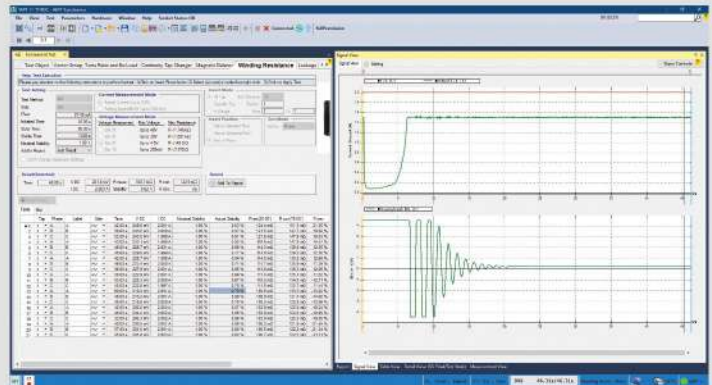
CVT

Used to test various classes of CVT



Transformer

Used to perform different transformer tests









Relay Tester AMT

Vendor List

Line	Company names	National ID	Field	Domestic/ Foreign	Nationality	Specifications	Product Category	Province	City	Address	Phone	Fax	Update Date	Description
656	Vebko Amirkabr remonitoring power quality	14004384990	Manufacture	Domestic	Iran	Relay protection tester AMT & Multifunction protection relay AMR	67	Qazvin	Qazvin	5th Floor, Building No 76, Parastar Boulevard, Norouzian Boulevard	+982833692361	+982833632038	2017/11/05	Self Declared

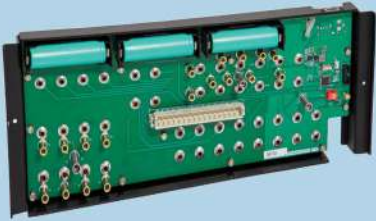
Equipment in Transportation Case

		 Weight : 12.5 Kg			 Weight : 12.5 Kg										
Tester Transportation Case		AMT205 Relay Tester			AMT105 Relay Tester										
AMT1001	Qty : 1	AMT1050			1	AMT1003		1							
															
Transformer Test Clamp	clamp cover	Combination Cable	Ethernet Cable	Power Cable	Crocodile Clips to Contacting Pins or Screw Bolts	Transformer Test Cable	Shoulder Bag								
AMT1016	8	AMT1028	8	AMT1004	1	AMT1007	1	AMT1006	1	AMT1012	4	AMT1015	3	AMT1002	1
															
Capacitor Box	Flexible test load adaptive with retractable sleeves 4 mm safety plugs 30 cm long , 32 A		Programming USB cable		Flexible test load adaptive with retractable sleeves 4 mm safety plugs 10 cm long , 320 A		Cable ties (Velcro fastener) Black , 150 mm long		Load Cable						
AMT1019	1	AMT1011	4	AMT1026	1	AMT1014	4	AMT1013	5	AMT1005	5				
															
Serial Dongle	Flexible terminal adapters 2.5 cm , 4 mm , 32 A		Cable Lug Adapter 4 mm		Ground Cable		Optical sensor for testing meter		GPS Antenna						
AMT1020	1	AMT1009	12	AMT1010	12	AMT1008	1	AMT1018	1	AMT1017	1				
															
Backpack Trans	Luggage Cover			Screwdriver		Bag A		Trans Cable Holder							
AMT1023	1	AMT1024	1	AMT1022	1	AMT1025	1	AMT1021	16						

Relay Tester AMT

Accessories

(*) : Needs Base Module



Base Module

Bass Module

AMT1030

(*)



CB Test Module

AMT1031

(*)



CT And CVT Test Module

AMT1033

(*)



Transformer Test Module

AMT1032

(*)



Relays Tester And High Voltage Module

AMT1039

(*)



Calibration Module

AMT1035



10 Milli OHM Shunt Module

AMT1038



High Voltage Linear Regulator Module

AMT1046



Insulation Resistance Measuring Module

AMT1040



Arc-Flash Module

AMT1051



Electronic Relays Test Module

AMT1034

Relay Tester AMT

Contact Information

International Office

Turkey / Istanbul / Buyukcekmece / Pinartepc Mah. / Okten sk. / No: 10D
Contact : Mostafa Hajati Tel : +905013673174
m.hajati@vebko.org Info@vebko.org



Relay Tester AMT



**OUR BUSINESS RELATIONSHIP WITH
Raya Farhour Anoush (RFACo)
INTERNATIONAL REPRESENTATIVE OF
VEBKO AMIR KABIR COMPANY**



Relay Tester AMT



FOR THE EXPORT OF RELAY TESTER & EQUIPMENT

Raya Farhour Anoush is the International Representative of Vebko Amir Kabir Company For Exporting Relay Tester & Equipment with more than 21 active representatives worldwide:

Brazil, India, Pakistan, England, Saudi Arabia, Australia, Croatia, Morocco, Indonesia, Iran, Iraq, Nigeria, Philippines, South Africa, Thailand, Turkey, Malaysia, United Arab Emirates, Bahrain, Oman, Uruguay



Vebko Amirkabir Co.

www.vebko.org