



VEBKO ONLINE HELP

Comparative Analysis of AMT105, AMT205, AMT103, and AMT203 Devices

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In this video, we'll carry out a comparative analysis of the hardware features of several models from Vebco's product line: AMT105, AMT205, AMT103, and AMT203.

Voltage Sources: Starting with the AMT105, this device is equipped with two voltage groups: one three-phase group rated at 150 volts, and one single-phase group also rated at 150 volts. In total, it provides four 150-volt sources, each capable of delivering up to 500 milliamps per phase. The minimum sampling rate for measuring real-time values in this device is 1.2 milliseconds. This applies both to the applied voltage and the drawn current, ensuring accurate and timely data acquisition. Additionally, the AMT105 includes an independent DC voltage source with a maximum output of 212 volts. This DC source operates separately from the other voltage outputs, allowing for greater flexibility in various testing scenarios.



Figure 1

In contrast, the AMT205 device offers two groups of three-phase 300-volt voltage outputs, each with a maximum amplitude of 1.2 amperes. The sampling rate for measuring actual values is at least 25 microseconds, which applies to both the supplied voltage and the drawn current. These voltage sources can be converted into 1.2-ampere current sources, capable of providing up to 300 volts of electrical potential for current injection. This feature enables the device to inject extremely small currents — as low as 20 microamperes — with high precision. The device does not include a separate DC source, so if a DC source is required, the user must dedicate one of the six available phases to that purpose.

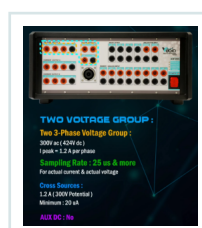


Figure 2

Current Sources: The AMT105 device includes two groups of 32-ampere current outputs, each capable of supplying 12 volts per phase. The sampling rate for measuring the actual values from these sources is at least 1.2 milliseconds, and it is used to monitor the drawn current.



Figure 3

In contrast, the AMT205 device includes two groups of 32-ampere current outputs, each capable of supplying 22 volts per phase. The sampling rate for measuring actual values from these sources is at least 25 microseconds, and is used to monitor both the injected current and the voltage supplied by the device. These current sources can be converted into 22-volt voltage sources with a maximum current of 32 amperes. This feature allows the device to apply very small voltages — as low as 40 microvolts — with high precision.

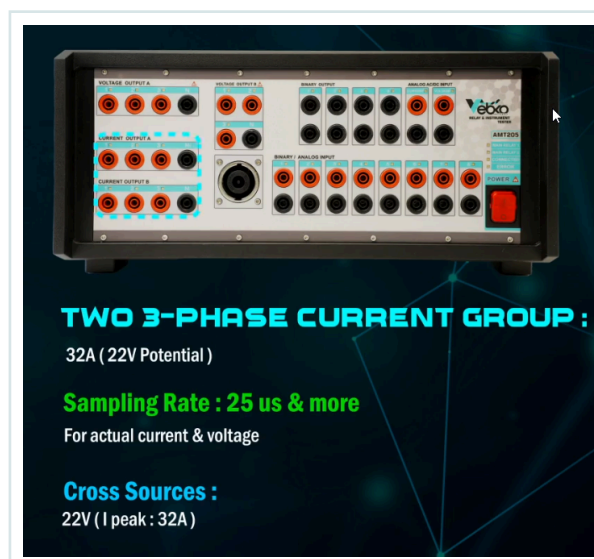


Figure 4

The Neutrik port on the AMT105 device provides three-phase voltage and three-phase current outputs for use in impedance and directional testing. It can also be reconfigured into six current phases for differential testing.

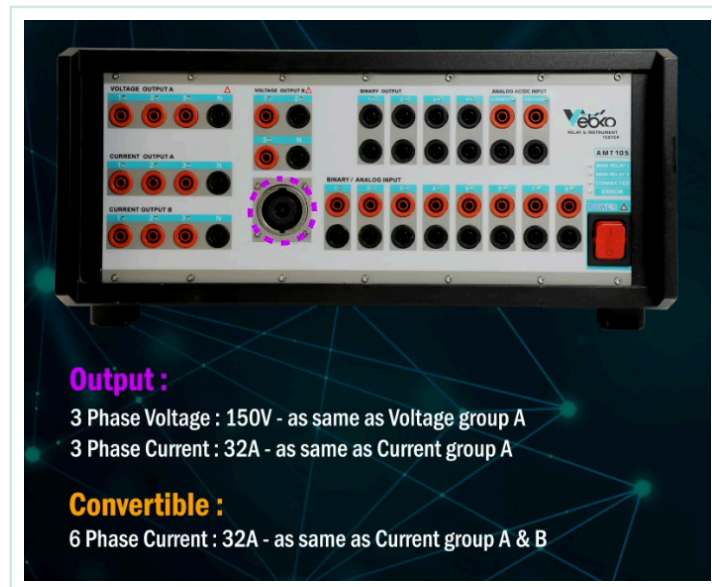


Figure 5

However, on the AMT205 device, the Neutrik port provides only three-phase voltage and three-phase current outputs for impedance and directional testing, and does not support reconfiguration.

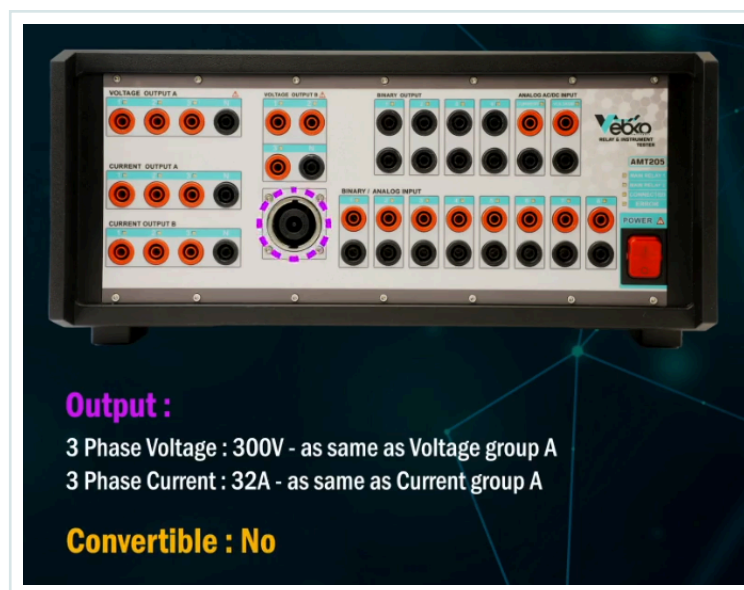


Figure 6

The AMT105 device includes eight binary/analog inputs, which can operate in either DRY (binary)

mode or WET (analog) mode. In analog mode, the device supports three input voltage ranges: 4.5 volts, 30 volts, and 188 volts. The sampling rate for measuring values can be selected starting from 400 microseconds and higher. Naturally, as the measurement range increases, the accuracy tends to decrease.

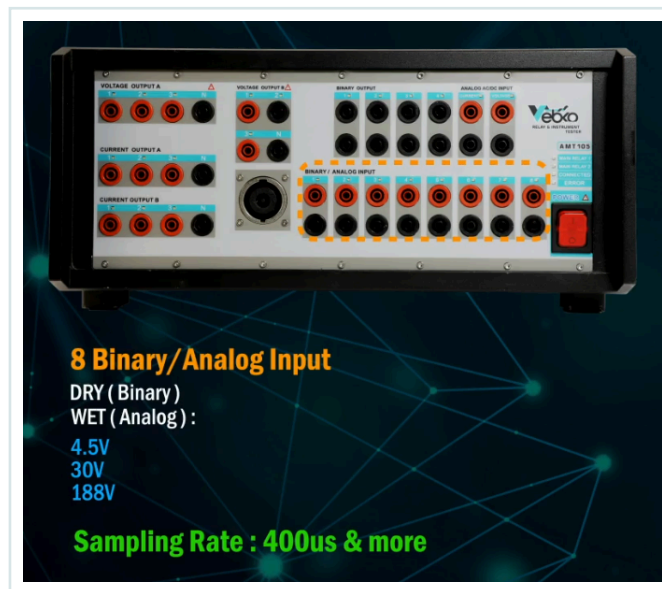


Figure 7

The AMT205 device also features eight binary inputs, which can operate in both DRY (binary) and WET (analog) modes. However, unlike the AMT105, in addition to the 4.5-volt, 30-volt, and 188-volt ranges, it also includes a 500-volt range. The sampling rate for measuring values can be selected from 12.5 microseconds and above. As expected, when the measurement range increases, the accuracy of the measurement tends to decrease.

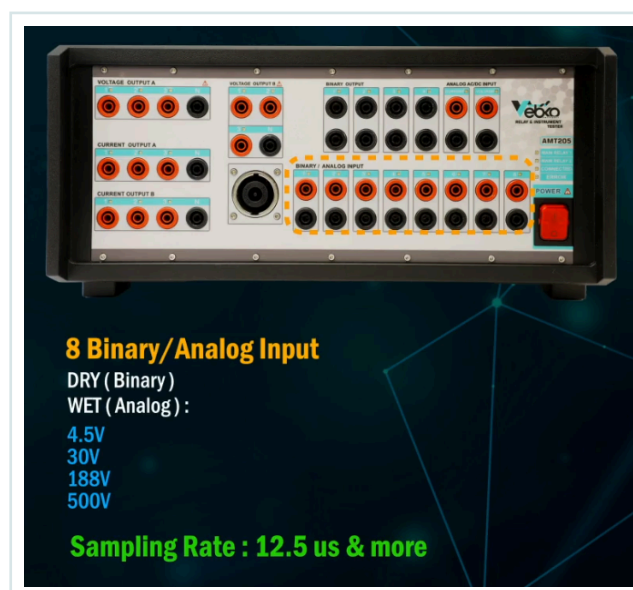


Figure 8

The AMT105 device includes two AC/DC analog inputs: one dedicated solely to current measurement, with a maximum range of 750 milliamperes, and the other dedicated to voltage measurement, with a maximum range of 400 millivolts. The sampling rate for measuring values can be selected from 400 microseconds and above.



Figure 9

The AMT205 device also includes two AC/DC analog inputs, but with extended capabilities. For current measurement, it offers four selectable ranges: 250 microamperes, 39 milliamperes, 750 milliamperes, and 10 amperes. For voltage measurement, it provides four ranges as well: 10 millivolts, 50 millivolts, 120 millivolts, and 400 millivolts. The sampling rate for measuring values can be selected from 12.5 microseconds and above. These inputs offer higher precision, especially when measuring smaller signals.



Figure 10

The AMT105 device features four binary outputs with relay switches, where neither the switch type nor current measurement can be changed.

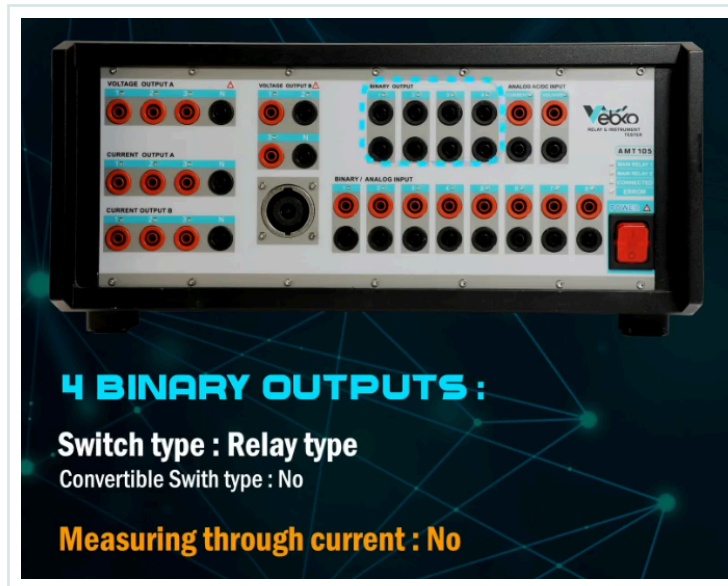


Figure 11

In contrast, the AMT205 device also includes four binary outputs, but with the option to select between transistor-types and relay-type switches. The relay type offers higher current capacity but has a slower switching speed, while the transistor type provides very high switching speed but can handle lower current levels. A key advantage of the AMT205 is that its binary outputs can measure current, a capability not available in the AMT105.

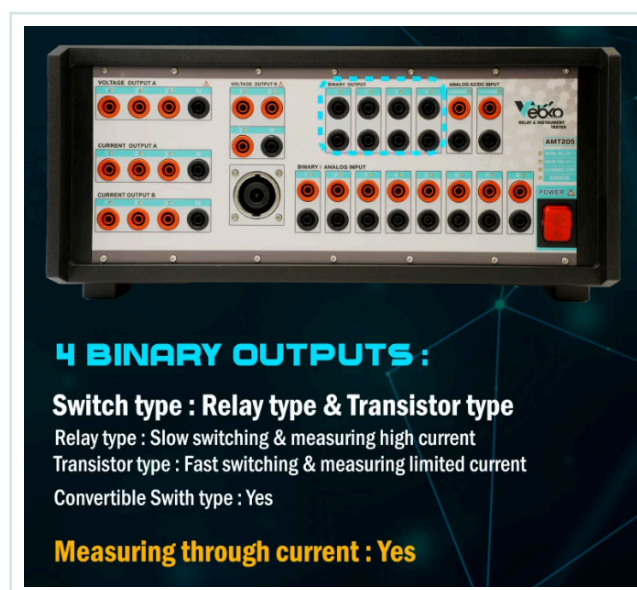


Figure 12

The AMT205 device can be connected to a laptop via both LAN and Wi-Fi. Thanks to its support for IEC 61850 testing, the device is equipped with three LAN ports, which can be used to create a ring connection between the device and two other IED systems.

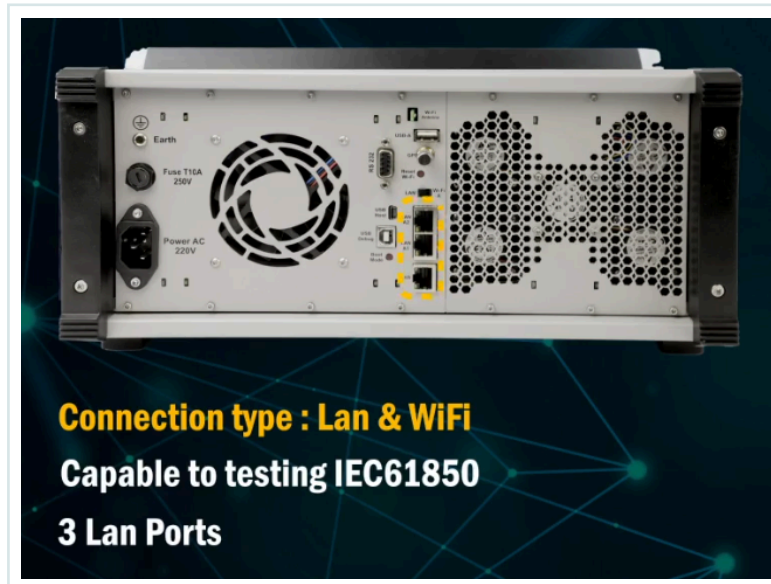


Figure 13

The AMT105 device also supports connection via LAN and Wi-Fi, but it does not support IEC 61850 testing and includes only one LAN port.



Figure 14

The AMT103 device shares the same technical specifications as the AMT105, with a few key differences: it includes four 150-volt voltage sources and three 32-ampere current sources, and it does not have an independent DC source. The number of binary/analog inputs has been reduced from

8 to 4, and on the Neutrik port, the number of voltage and current sources is fixed at three voltage outputs and three current outputs.

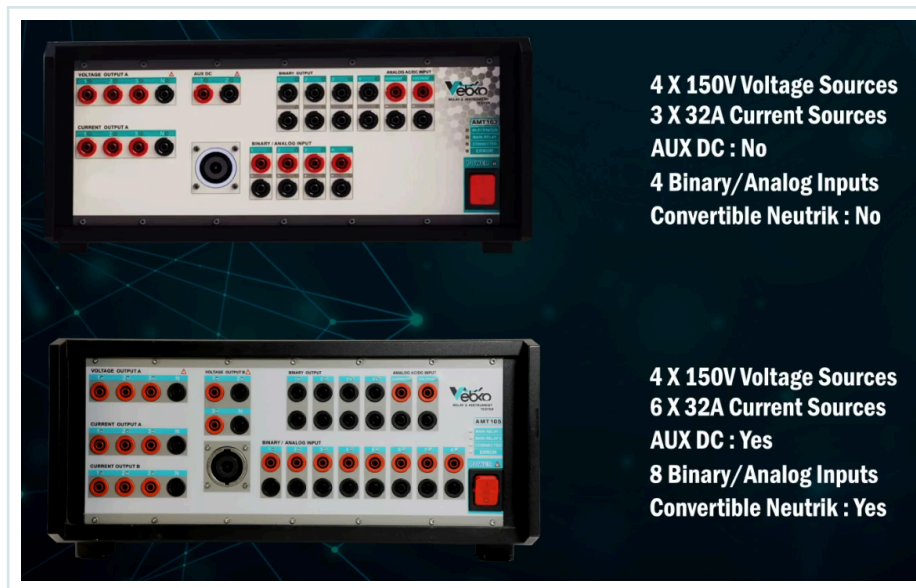


Figure 15

The AMT203 device shares the same technical specifications as the AMT205, with a few key differences: it includes four 300-volt voltage sources and three 32-ampere current sources. Additionally, the number of binary/analog inputs has been reduced from 8 to 4.



Figure 16