

# ARTES 600

## SPECIFICATIONS



**Applications** Highly precise, portable measuring system for functional tests on various types of protection equipment. Four voltage outputs and six current outputs which can provide particularly high output power allow three-phase tests on static, digital and self-powered relays as well as differential protection relays. Analog measurement inputs also make it possible to test and calibrate transducers

The device can be operated and controlled either with a PC and the ARTES testing software or alternatively by means of the built-in control panel equipped with a high-resolution, resistive 5" touch screen, function keys and a jog wheel.

**Sources** All signals can be set separately and independently of one another as regards phase, amplitude and frequency. The output values of the current and voltage amplifiers are monitored by means of internal feedback measurements. If the output values do not agree with the setpoint values, a warning is issued to this effect. All outputs also have overload and short-circuit protection.

<b>General</b>	Frequency range	DC...3 kHz
	Transient signals	DC...4 kHz
	Frequency resolution	0.001 Hz
	Frequency accuracy	Error < 0.01%
	Phase angle	0...360°
	Phase resolution	0.001°
	Phase accuracy	Error < 0.05° <sup>1)</sup>
<b>Voltage outputs</b>	4-phase (L-N)	4 x 0...300 V / 75 VA <sup>3), 4)</sup>
	1-phase (L-L)	1 x 0...600 V / 150 VA <sup>3), 4)</sup>
	Resolution	13 mV
	Accuracy	Error < 0.05% <sup>1), 2)</sup>
	THD	< 0.05% <sup>1)</sup>
<b>Current outputs</b>	6-phase	6 x 0...32 A / 250 VA <sup>3), 4)</sup>
	3-phase	3 x 0...64 A / 500 VA <sup>3), 4)</sup>
	1-phase	1 x 0...96 A / 500 VA <sup>4)</sup>
	Resolution	1 mA
	Accuracy	Error < 0.05% <sup>1), 2)</sup>
	THD	< 0.05% <sup>1)</sup>

**Low-level signal outputs** Special low-level outputs with very high accuracy make it possible to test protection devices with low-level signal inputs. All signals can be set separately and independently of one another as regards phase, amplitude and frequency. All outputs also have overload and short-circuit protection.

Number	10 outputs in 3 groups
Output range	0...10 V <sub>pk</sub>
Max. output current	20 mA
Resolution	300 µV
Accuracy	Error < 0.05%
Frequency range	DC...3 kHz
Transient signals	DC...4 kHz
THD	< 0.05%
Frequency resolution	0.001 Hz
Frequency accuracy	Error < 0.01%
Phase angle	0...360°
Phase resolution	0.001°
Phase accuracy	Error < 0.05°

<sup>1)</sup> For the frequency range of 10...100 Hz

<sup>2)</sup> Of range

<sup>3)</sup> For symmetrical output quantities

<sup>4)</sup> Supply voltage 230 VAC, 50 Hz

<b>DC output</b>	Output range	12...260 VDC
	Output power	50 W, max. 2 A
	Accuracy	Error < 5%
	Protection	Overload and short-circuit protection
<b>Analog inputs</b>	Number	2
	Measuring range	0...±20 mA
	Accuracy	Error < 0.05% <sup>2)</sup>
	Protection	Galvanic isolation via digital high-speed isolators
<b>Multi-function inputs</b>	Multi-function inputs for the measurement of analog and binary signals. The trigger threshold and the trigger range can be freely configured for evaluation purposes. The inputs are also configurable for the measurement of potential-free contacts.	
	Number	12
	Measuring ranges	2/10/300/600 VAC/DC
	Frequency range	DC...6 kHz
	Trigger threshold/range	0...300 VDC, freely configurable, or potential-free contact
	Accuracy	Error < 0.05% <sup>2)</sup>
	Galvanic isolation	6 galvanically isolated groups with 2 measurement inputs each
	Safety class	150 V CAT IV; 300 V CAT III; 600 V CAT II
<b>Binary outputs</b>	<b>Relay</b>	Number 2
	AC switching capacity	0...250 VAC, 8 A, resistive load
	DC switching capacity	0...300 VDC, I <sub>max</sub> = 8 A, 50 W
	Protection	Potential-free and galvanically isolated output relays
	<b>Transistor</b>	Number 2
	Switching frequency	1 kHz
	Switching capacity	0...300 VDC, 50 mA
<b>Complete system</b>	All the connections required for linking up to the device under test can be found on the front panel of the device. The power supply, an Ethernet interface and a USB interface are also integrated in the front panel. This means that ARTES 600 can also be operated in an upright position.	
	<b>Operation</b>	PC ARTES testing software for Windows® XP/7/8/10
	Stand-alone	5" touch screen, high-resolution, resistive 3 function keys and a jog wheel
	<b>Connections/ interfaces</b>	Measurement connections 4 mm safety sockets
	Low-level signal outputs	3 push-pull output sockets, U <sub>LS 1...4</sub> , U <sub>LS 5...7</sub> , U <sub>LS 8...10</sub>
	Generator socket	The amplifier output signals U <sub>1...3</sub> und I <sub>1...3</sub> can be picked up via 4 mm safety sockets or via the generator socket.
	Interfaces	USB, 3 x Ethernet, Wi-Fi
	Time synchronisation	Internal GPS receiver with SMA antenna connection
	Status LEDs	Indication of active current and voltage outputs and of the status of the binary inputs and outputs by LEDs
	<b>Supply voltage</b>	Rated voltage 100...265 VAC, 47...63 Hz / 120...265 VDC
	Wattage	2500 W
	<b>Construction</b>	Housing Portable 19" housing, 4 U, the carrying handle can also be used as a stand
	Protection	IP20
	Dimensions (W x H x D)	470 x 202 x 326 mm, without handle
	Weight	15.9 kg
	<b>Environment</b>	Operating temperature 0...50°C
	Storage temperature	-20...60°C
	Relative humidity	5...90%, non-condensing
	Vibration	IEC 60068-2-6
	Shock	IEC 60068-2-27
	<b>Generic standards</b>	Safety EN 61010-1, 150 V CAT IV; 300 V CAT III; 600 V CAT II
	EMC	EN 61326-1
	EMC emissions	EN 61000-6-4
	Susceptibility	EN 61000-6-2

<sup>1)</sup> For the frequency range of 10...100 Hz

<sup>2)</sup> Of range