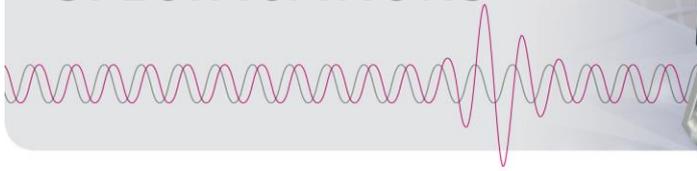


# ARTES 460 II

## SPECIFICATIONS



**Applications** Highly precise, portable measuring system for functional tests on various types of protection equipment. Four voltage and six current outputs allow three-phase tests on static and digital relays and on 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 3.5" 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)</sup>
	3-phase (L-N)	3 x 0...300 V / 100 VA <sup>3)</sup>
	1-phase (L-L)	1 x 0...600 V / 150 VA <sup>3)</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...16 A / 40 VA <sup>3)</sup>
	3-phase	3 x 0...32 A / 80 VA <sup>3)</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, 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	8
	Frequency range	DC...4 kHz, linear frequency response
	Voltage range	4 x 0...±10 V / 600 V <sub>rms</sub>
	Current range	4 x 0...±20 mA / 0...±10 V
	Accuracy	Error < 0.1% <sup>2)</sup>
	Protection	Galvanic isolation via digital high-speed isolators
<b>Binary inputs</b>	The binary inputs are arranged in groups. The groups can be configured for wet or dry contacts.	
	Number	8
	Groups	2 with 4 measurement inputs each
	Response threshold	24...300 VDC, or potential-free contact
	Max. measurement duration	unlimited
	Sampling rate	8 kHz
	Protection	Transient protection, polarity protection and galvanic isolation via opto-couplers
<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>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 460 can also be operated in an upright position.	
	<b>Operation</b>	PC
		Stand-alone
		ARTES testing software for Windows® XP/7/8/10
		3.5" touch screen, high-resolution, resistive
		2 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</sub> 1...4, U <sub>LS</sub> 5...7, U <sub>LS</sub> 8...10
		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
		1000 W
	<b>Construction</b>	Housing
		Portable 19" housing, 3 U, the carrying handle can also be used as a stand
		Protection
		IP20
		Dimensions (W x H x D)
		470 x 162 x 326 mm, without handle
		Weight
		11.7 kg
	<b>Environment</b>	Operating temperature
		0...50°C
		Storage temperature
		-20...60°C
		Relative humidity
		5...90%, non-condensing
	<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