



## ARTES 600 ■



### The universal relay testing solution

ARTES 600 is the compact and universal solution for testing all types of protection relays. Because of the built-in control panel, the light weight and the low noise level, the robust test system can be used on site as well as in laboratories.

ARTES 600 makes light work of highly complex test tasks. 4 voltage outputs and 6 current outputs which can provide particularly high output power allow three-phase tests on static, digital and self-powered relays. Even three-phase tests on differential protection relays can be carried out without additional equipment.

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### HIGH POWER, PRECISE AND VERSATILE

#### The new amplifier and measuring units

ARTES 600 is the perfect answer to the need to combine high output power and high amplifier accuracy in one device. With powerful, high-precision amplifiers, multifunctional measurement inputs and, last but not least, simple handling and operation, ARTES 600 is the ideal solution for professional 3-phase relay testing.

### ERGONOMIC, SIMPLE AND FAST

#### The new TJCP operator interface

The new internal TJCP operator interface is a special feature. Its high-resolution 5" touch screen with smart touch technology enables many tests to be carried out quickly and easily without having to connect an external PC. The clear, restructured user interface guides the user intuitively to complete the task in hand.

User actions carried out with the ergonomic jog wheel, such as amplitude, phase angle or frequency adjustments, are processed in real time and executed without delay. An illuminated ring integrated in the jog wheel and additional acoustic signals indicate system status during settings and tests.

The new TJCP operator interface also provides a wide range of communication interfaces, such as USB, 3 x Ethernet, Wi-Fi and an internal GPS receiver unit.



### COMPACT, ROBUST AND INNOVATIVE

#### Key features of the new hardware architecture

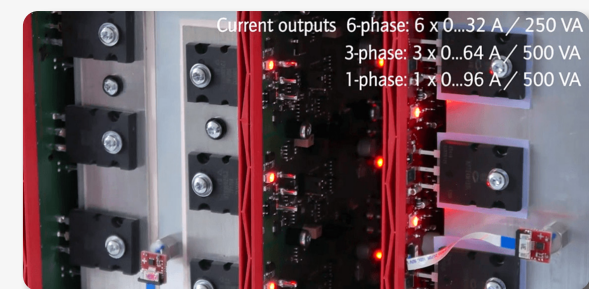
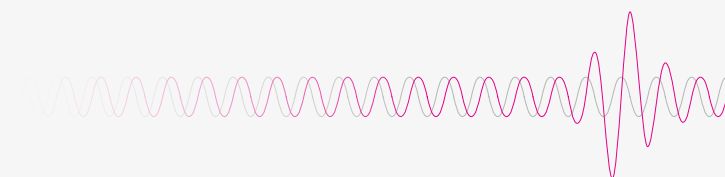
More than 25 years of experience in developing and manufacturing automatic relay test systems have gone into creating the fourth generation of ARTES test instruments. Despite increasing the power and the number of channels, it was possible to retain the positive features of its predecessor, including the compact and robust design, low weight and low noise level. However, the new hardware does not only provide higher power, it also offers a number of special features which provide added value and make ARTES 600 even more versatile.

#### ■ Multi-function inputs for measurement of analog and binary signals

12 multi-function inputs are assigned to 6 galvanically separated groups. These inputs can be used for analog quantities as well as for binary signals. The response threshold and the response range can be freely configured for evaluation purposes.

#### ■ Test currents of up to 96 A with parallel operation

The current amplifiers provide a maximum test current of 6 x 32 A. Parallel operation of the current outputs allows output of up to 3 x 64 A for 3-phase applications and up to 96 A for 1-phase applications.



Current outputs 6-phase: 6 x 0...32 A / 250 VA  
3-phase: 3 x 0...64 A / 500 VA  
1-phase: 1 x 0...96 A / 500 VA

■ **Generator socket for connection of the device to be tested**

Three voltages and three currents can alternatively be picked up via the generator socket. The device to be tested can be connected to the test instrument simply, correctly and quickly using a generator connection cable.

■ **High-accuracy low-level signal outputs**

Special low-level outputs with very high accuracy make it possible to test protection devices with low-level signal inputs. The behaviour of various different sensors, such as Rogowski coils, is reproduced precisely.

■ **Separate DC output**

The separate DC supply can be used to power the device to be tested, for example. The range is between 12...260 VDC.

■ **Output of control commands via 4 binary outputs**

During output, 4 binary signals can be output in real time parallel to the analog quantities.

■ **LEDs for status indication**

The user can tell at a glance which outputs are active and can easily identify the states of the binary inputs and outputs.

■ **Operation in a vertical position**

All connections and interfaces are located on the front panel. This means that ARTES 600 can be operated in an upright position if there is not enough space or if no table is available.

**ARTES testing software**

As a rule, all test tasks can be carried out using the integrated control panel. The ARTES PC software is a tool which can really simplify, automate and speed up tests for complex protection functions. For this purpose, the ARTES testing software provides a wide range of practical test monitors which are all included in the scope of delivery, in addition to the basic software:

■ **VD-Monitor**

Test any protection function by setting the test quantities manually. In addition, the output signals can be run as linear or staircase ramps within the configured range.

■ **IT-Monitor**

Check the operating times and directional sensitivity of overcurrent relays

■ **IMP-Monitor**

Check the operating times and impedance zones of distance protection devices

■ **DIFF-Monitor**

Check the tripping characteristic and operating times of differential protection relays

■ **QU-Monitor**

Check the Q-U protection function

■ **SYNC-Monitor**

Test paralleling devices and synchronizers

■ **PIC-Monitor**

Check the pick-up and drop-off values of protection relays

■ **TD-Monitor**

Determine measuring transducer error

■ **SmartSequencer**

Event-controlled output of test sequences

■ **TRANSIG-Monitor**

Display and output COMTRADE records and generate any signal characteristic

**TECHNICAL DATA**

|                                 |  |
|---------------------------------|--|
| <b>Sources</b>                  | 4 voltage and 6 current outputs  |
| Frequency range                 | DC...3 kHz   |
| Transient signals               | DC...4 kHz   |
| Phase angle                     | 0...360°   |
| <b>Voltage outputs</b>          |  |
| 4-phase (L-N)                   | 4 x 0...300 V / 75 VA  |
| 1-phase (L-L)                   | 1 x 0...600 V / 150 VA   |
| <b>Current outputs</b>          |  |
| 6-phase                         | 6 x 0...32 A / 250 VA  |
| 3-phase                         | 3 x 0...64 A / 500 VA  |
| 1-phase                         | 1 x 0...96 A / 500 VA  |
| <b>Low-level signal outputs</b> | 10 separately and independently adjustable outputs, output range 0...10 V <sub>pk</sub>                                    |
| <b>DC output</b>                | 12...260 VDC, 50 W, max. 2 A   |
| <b>Analog inputs</b>            | 2 x 0...±20 mA   |
| <b>Multi-function inputs</b>    | 12 inputs in 6 galvanically isolated groups  |
| Measuring ranges                | 2 / 10 / 300 / 600 VAC / DC  |
| Frequency range                 | DC...10 kHz  |
| Response threshold/range        | Freely adjustable, or potential-free contact   |
| <b>Binary outputs</b>           | 2 potential-free, galvanically isolated relays<br>2 transistor outputs   |
| <b>Operation</b>                |  |
| PC                              | ARTES testing software for Windows® 7/8/10/11  |
| Stand-alone                     | 5" touch screen, 3 function keys, jog wheel  |
| <b>Measurement connections</b>  | All the connections are located on the front panel. This means that ARTES 600 can also be operated in an upright position. |
| <b>Interfaces</b>               | USB, 3 x Ethernet, Wi-Fi   |
| <b>Time synchronization</b>     | Internal GPS receiver  |
| <b>Status LEDs</b>              | Indication of active current and voltage outputs and of the status of the binary inputs and outputs by LEDs                |
| <b>Supply voltage</b>           | 100...265 VAC, 47...63 Hz / 120...265 VDC  |
| <b>Housing</b>                  |  |
| Dimensions (mm)                 | 470 x 202 x 326 (W x H x D)  |
| Weight                          | 15.9 kg  |

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