

**Name:3-Phase Protection Relay Test System****Model: VAE 430****Descriptions**

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The VAE-430 three-phase relay protection tester offered here is designed to test all the major protection testing projects, including the 27 underfrequency protection, 59 overcurrent protection, 67 undervoltage protection, 81 overfrequency protection, 87 differential protection, 51 time overcurrent protection, 50 boundary protection, 21 distance protection, 86 rate of change of frequency protection, and 32 directional power protection, and others. This tester is capable of accurately measuring and analyzing the performance of the tested power systems, ensuring that the relays operate within their specified parameters, and helping ensure the continuous and stable operation of the power grid.

**Main Features**

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Powerful current sources for testing even high-burden electromechanical relays  
High current amplitudes for 5 A relay testing  
High accuracy and versatility for testing static and numerical relays of all types  
High accuracy injectional current for measure CT testing

## Hardware overview

3-phase current output maximum 40A L-N  
Maximum 120A L-N (Three-Phase Parallel)  
4-phase voltage output maximum 120V AC L-N  
Maximum 240V AC  
Inbuild operation system with LCD screen  
Serial port available for PC control  
8 channel binary input  
4 channel binary output  
Auxiliary DC power Supply (DC 110V or 220V)

## Main functions

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AC/DC test  
State Series  
Harmonic Superposition Test  
Power Direction & Impedance Test  
Synchronization Test  
Full Group Test I & II  
Distance & Zero Sequence Protection  
Differential test  
Characteristic of Impedance  
Differential Protection  
Differential Harmonic

## Technical Data

| Current Generator |                   |                 |
|-------------------|-------------------|-----------------|
| Setting Range     | 3-Phase AC(L-N)   | 3x0...40A       |
|                   | 1-Phase AC(LL-LN) | 1x0...120A      |
|                   | DC(L-N)           | 3x...±10A       |
| Power             | 3-Phase AC(L-N)   | 3x420VA At 40A  |
|                   | 1-Phase AC(LL-LN) | 1x900VA At 120A |
|                   | DC(L-N)           | 3x120VA At 10A  |
| Accuracy          | AC: ≤0.2%         |                 |
|                   | DC: ≤0.5%         |                 |
| Voltage Generator |                   |                 |

|                            |                     |                 |
|----------------------------|---------------------|-----------------|
| Setting Range              | 4-Phase AC(L-N)     | 4x0...120V      |
|                            | 1-Phase AC(L-L)     | 1x0...240V      |
|                            | DC(L-N)             | 3x...±160V      |
| Power                      | 4-Phase AC(L-N)     | 4x80VA At 120V  |
|                            | 1-Phase AC(L-L)     | 1x100VA At 240V |
|                            | DC(L-N)             | 3x70VA At 160V  |
| Accuracy                   | AC: ≤0.2%           |                 |
|                            | DC: ≤0.5%           |                 |
| <b>Auxiliary DC Supply</b> |                     |                 |
| Voltage Range              | 110V/220V(Max.1.5A) |                 |
| Power                      | Max.165VA/330VA     |                 |

| <b>Binary Inputs</b>      |                                        |
|---------------------------|----------------------------------------|
| Number                    | 8                                      |
| Input Characteristics     | Idle Contact Or Potential-Free Contact |
| Threshold Characteristics | “0”:0~6V; “1”:11V~250V                 |
| Max. Measuring Time       | 0.1ms~9999s                            |
| Time Accuracy             | 0.1ms                                  |
| <b>Binary Outputs</b>     |                                        |
| Number                    | 4                                      |
| Type                      | Idle Contact                           |
| Break Capacity            | 220VAC/0.5A, 220VDC/0.2A               |

| <b>General Generators</b>              |                                                       |
|----------------------------------------|-------------------------------------------------------|
| Frequency                              | Range: 0~1000Hz(PC Mode), 20~300Hz(Local Mode)        |
|                                        | Accuracy:<10mHz(0~450Hz),<20mHz(450~1000Hz)           |
|                                        | Resolution: 0.01Hz                                    |
| Phase                                  | Range: 0~360°                                         |
|                                        | Accuracy: 0.2°                                        |
|                                        | Resolution: 0.1°                                      |
| Harmonic                               | Superposition Orders: 1~20(PC Mode), 1~6(Local Mode), |
|                                        | Distortion: ≤0.5%                                     |
| <b>Power Supply</b>                    |                                                       |
| Nominal Input Voltage                  | Customized (AC 220V/230V±10%, 1-Phase)                |
| Nominal Frequency                      | 50/60 Hz                                              |
| Rated Current                          | 10A At 230V / 12A At 115V                             |
| Connection                             | Standard AC Socket (IEC 60320)                        |
| <b>Environmental Conditions</b>        |                                                       |
| Operation Temperature                  | 0 ... +50 °C (+32 ... +122 °F)                        |
| Storage Temperature                    | -25 ... +70 °C (-13 ... +158 °F)                      |
| Humidity Range                         | Relative Humidity 5 ... 95 %, Non-Condensing          |
| Vibration                              | IEC 60068-2-6(20m/S <sup>2</sup> At 10 ... 150 Hz)    |
| <b>Miscellaneous</b>                   |                                                       |
| Weight                                 | 22kg(48.50 Lb)                                        |
| Dimensions (W X H X D, Without Handle) | 400×300×180mm(15.75x11.81x7.09 In)                    |
| Connection Port                        | For PC Connection                                     |