



GDJB-6000D Smart Substation Relay Protection Test System



General Information

GDJB-6000D Smart Substation Relay Protection Test System is a new generation of intelligent relay protection tester designed according to the technical specifications related to "DL/T 624-2010 Relay Protection Micro-type Test Device Technical Conditions", and based on IEC61850 communication standard, realized by using advanced computer technology.

GDJB-6000D is equipped with high-performance power amplifier and based on the powerful PowerPC+X86 platform,. It adopts modular design and have powerful functions, high precision, small size and light weight features. It can test the function

and performance of merging unit, relay protection device ,measurement and control device , intelligent terminals etc., very suitable for power plants , substations, various scientific research units and equipment manufacturing enterprises.

Features

- Smart Test Module. Intelligent test template editing is supported. Test items can be randomly added during the test process and saved as reusable test project files to improve the test efficiency in the final stage of inspection and elimination.
- Automatic testing. With on-site protection and digital protection automatic test function, all test items of a single protection device can be completed with one-key.
- Multiple scanning modes. Supports amplitude, phase, frequency, impedance, vector, sequence, and power are carried out by manual or automatic test, also supports automatic change test according to the method of gradation, slip and synthesis.
- Virtual terminal graphical display. Support virtual terminal graphical display function, the data flow is clear.
- Send and receive messages at the same time. Support IEC61850-9-1, IEC61850-9-2 and GOOSE optical digital message output. The GOOSE signal can be sent and received independently, and it can also send and receive by an optical Ethernet interface with IEC 61850-9-2.
- FT3/Extended FT3. Support FT3, FT3 expansion and DL/T 282 message output, and support 2M/4M/6M/8M/10M baud rate UART encoding and 5M/10M/20M Manchester encoding.

- Abnormal test. With analog message abnormality function, it can simulate abnormality in quality, sending frequency jitter, delay anomaly, packet loss, out of step, serial number jump, maintenance mode, state virtual change and other tests.
- Fault playback. Supports fault simulation and COMTRADE format data playback function.
- MMS service. With MMS reading and writing function, can read and write intelligent IED equipment settings and other configuration information.
- Time synchronization and time giving. With synchronous trigger function, support for direct access to GPS/BD antenna for the time synchronization, also supports IRIG-B, PPS and PTP 1588 timing mode and can support external output IRIG-B, PPS and PTP 1588 time giving signal.
- Hard contact binary input and binary output. The input quantities are active and passive adaptive contacts, and the input type and input voltage are automatically recognized. The channels are isolated from each other, and the polarity reverse connection with alarm prompt.
- Message receiving and analysis. With the message receiving and analysis function, the received message can be opened with ZHNPA for analysis or export.
- Single fiber mode. The optical port supports single-fiber transmission and single-fiber reception and supports optical power testing.
- Analog small signal. It is equipped with analog small signal interface, support 12 way analog small signal input, can measure -7V~ 7V AC voltage, support 12 way analog small signal output, and can output -7V~ 7V AC voltage.
- Touch operation. Equipped with a 10.4 inch high-resolution display that supports touch operation.
- Wireless connection. Provide remote test function, with WIFI module, user-friendly.

Specification

IEC 61850 communication port	
Function	Any configuration of IEC 61850 9-1/9-2 SMV transmission, receiving or GOOSE transmission and reception
Interface type	LC optical port
Quantity	8 pairs, 6 pairs*100M adaptive, 2 pairs *100/1000M adaptive
Wave length	1310nm
IEC 60044 communication port	
Function	GB/T 20840.8 , DL/T 282, Q/GDW441 message received and send
Interface type	ST
Quantity	6*sending interface , 2* receiving interface
Phase	
Range	0~360°
Accuracy	±0.1°

Resolution	0.1°
Frequency	
Range	0~1000Hz
Accuracy	$<\pm 0.001\text{Hz}$ (0~65Hz) $<\pm 0.01\text{Hz}$ (65~450Hz) $<\pm 0.02\text{Hz}$ (450~1000Hz)
Resolution	0.001Hz
Time	
Range	10ms ~9999.999s
Resolution	1ms
Binary contact input	
Quantity	8 pairs, Can be connected to idle contact and with potential contact (0~250V)
Binary contact output	
Quantity	6 pairs, 2 pairs are fast output
Breaking capacity	DC250V /0.5A
Response time	<100us

Synchronize	
Interface type	GPS/BD ANT; IRIG-B/PPS optical signal; IRIG-B/PPS electric signal; IEEE 1588
Quantity	1*GPS/BD ANT; 2*IRIG-B/PPS optical signal : 1* time synchronization, 1* time giving; 2 pairs*IRIG-B/PPS electric signal :1 pair *time synchronization, 1 pair * time giving; 1 pair* IEEE 1588
Wireless connection	
Interface type	WIFI
Wired connection	
Interface type	100M Lan port , RJ45
Quantity	2 pieces
Analog small signal input	
Interface type	Aviation plug, AC voltage
Quantity	12 channel
Analog small signal output	

Interface type	Aviation plug, AC voltage
Quantity	12 channels
Power supply	
Voltage	AC/DC 220V , Allowable deviation: -20%~15%
Frequency	47~65Hz
USB interface	
Quantity	2 pieces
Working environment	
Working temperature	-10℃~50℃
Humidity	≤95%, non-condensation
Others	
Weight	5.5 kg
Dimension	146*390*212mm(L*W*H)
Online interface	RJ45
Display	10.4 inch true color LCD touch screen

