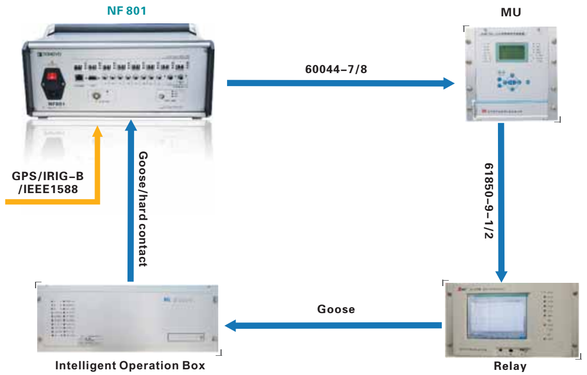
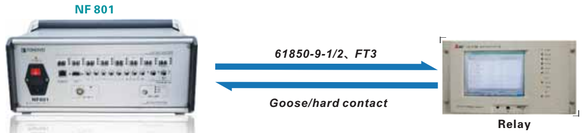
Substation Test



Intelligent Device Test



Intelligent Operation Box Test

PONOVO POWER CO., LTD.
2F,4Cell, Tower C, In.Do Mansion,
No.48A Zhichun Road, Haidian District
Beijing, PR China (100098)
Tel.+86 (10) 8275 5151(reception)
Tel. +86 (10) 8275 5151ext.8887
Fax. +86 (10) 8275 5151-8103
support@relaytest.com
info@relaytest.com
www.relaytest.com

ISO 9001 QMS
ISO 14001 EMS
OHSAS 18001

PONOVO

NF801

Intelligent Relay Tester

www.relaytest.com

Introduction

The new generation of optical digital relay tester. 8 optical port design, and powerful data processing capability can realize full functional test of the optical digital protection devices. It also can simulate closed-loop test on MU. Equipped with GPS, IRIG - B code synchronization interface and supports the IEEE1588 to provide the conditions to substation internal debugging and substation to substation combine debugging.

Software has years of testing experience. It based on powerful test functions and the template function. It integrated the unique functional testing of optical digital protection include: the abnormal SV simulation, virtual terminal test, the optical power testing and so on. Efficient, fast to complete the intelligent station test.

Features

- 8 Fiber Optical Ports for:
  - Receiving and sending IEC61850-9-2 and Goose message
  - Receiving and sending IEEE1588 message
  - Measuring received fiber optical power
- Provide flexibility to configure both SV (IEC61850-9-2) and GOOSE ports independently.
- Strong data receiving and sending capability for each fiber optical port:
  - Can send 6 groups of SV at the same time
  - Can send 12 groups of GOOSE at the same time
  - Can receive 5 groups of GOOSE message
  - Can send/receive IEE1588 message
- While sending SV, the dispersion of the MU is better than ±80ns
- Can receive SV, realizing self-loop test
- Fiber-optic ports can be used to measure received optical power
- 8 Independent IEC60044-7/8(FT3) format SV output port
- Can simulate collector and output IEC60044-8 format message to MU
- 12 configurable independent low-level analog signal output terminals,can be used to test the low-level signal input device
- Can publish/subscribe many different GOOSE control block message
- Analyze model file(SCD、ICD、CID、NPI) automatically
  - Can configure SV, sample channel message, GOOSE message automatically
  - Can check the GOOSE communication link
- SV, GOOSE configure message can be saved and recall repeatedly
- Simulate the abnormal massage (jitter, frame loss, flying spot, wrong sequence, data anomalies, packet retransmission, channel invalid, out of step, etc.)
- With IEEE1588 synchronization function and the deviation of the time is less than 80ns
- IRIG-B synchronization port and built-in GPS synchronization mechanism

Panel Description

Front Panel

Real Panel

Technical Parameters

Fiber-optic communication port: IEC61850-9-1/2, GOOSE	
Type	100Base-FX（100Mbit、Fiber、全双工）
Port Number	8 pairs LC ports
Fiber Type	62.5/125μm(Mult-mode Fiber，Orange)
Wave Length	1310nm
Transmission Distance	>1km
FT3 Port : IEC60044-7/8	
Standard	IEC60044-7/8
Port Number	8 pair ST ports
Fiber Type	62.5/125μm(Mult-model Fiber，Orange)
Wave Length	850nm
Transmission Distance	>1km
12 Low-level Signal Analog Output	
Amplitude Setting Range	AC:0～7.07Vrms(RMS) DC:0～10V
Amplitude Accuracy	0.07～7.07Vrms:Error<0.2% 0.02～0.07Vrms:Error<1%
Amplitude Resolution	250μV
Amplitude Distortion(THD+N)	<0.1%
Frequency Sine signal	10～1000Hz
Frequency Transit Signal	DC～10.0kHz
Frequency Accuracy	0.002%(Industry Frequency，Error1mHz)
Frequency Resolution	0.001Hz
Phase Angle Range	0to359.9°
Phase Accuracy	<0.1°，50/60Hz°
Phase Accuracy	±0.01°
Main Power	
Rated voltage	220V (AC),50Hz
Range	100V～240V (AC)
Frequency Range	40～60Hz
8 Pair of Binary Outputs (A-H)	
Input Characteristic	30V～250V (DC)or empty contact (automatic identification)
Sample Rate	10kHz
Time Resolution	100μs
Max Measurement Time	1.50×10^{7}s
Timing Error	±1ms (0.001s～1s) ±0.1%(1s～1.50×10^{7}s)
Anti-jitter time setting range (Software)	0ms～25ms
Electrical Isolation	8 pair input electrical isolation
Threshold Impedance Parameters (Dry Contact)	5kΩ...13kΩ
4 Pair Binary Output (1-4)	
Type	Empty contact, regardless of polarity
AC Capacity	Vmax:250V（AC）/Imax:0.5A
DC Capacity	Vmax:250V（DC）/Imax:0.5A
4 Pair Binary Output (5-8)	
Type	Fast contact output, speed of response is 100us
AC Capacity	Vmax:220V（AC）/Imax:0.5A
DC Capacity	Vmax:220V（DC）/Imax:0.5A