

Intelligent Safety Analyzer AN1636H(F)AN1638H(F)AN1639H(F) Series



Product Overview

Ainuo Instrument Co., Ltd has been dedicated to the research and development of electrical safety analyzers for over 30 years, and has participated in drafting 16 national standards and industry calibration regulations for safety analyzers. This AN163X(H) Series Intelligent Safety Analyzer features complete functions, high performance, automation, and informatization, providing comprehensive safety test solutions for various electrical products.

Applications

- Audio and video, information technology, and communication technology equipment (GB4943.1/IEC62368-1)
- Safety requirements for electrical equipment for measurement, control, and laboratory use (GB4793.1/IEC61010-1)
- Safety Requirements of traction battery used by electric vehicles (GB38031-2020)
- Safety requirements of secondary lithium cells and batteries used in electrical energy storage systems (GB44240-2024)
- Technical requirements for power conversion system of electrochemical energy storage system (GBT34120-2023)
- Electric vehicle conductive charging system (GB/T18487.1)
- Terrestrial photovoltaic (PV) modules - Design qualification and type approval (IEC61215-1-2021)
- Technical specifications of junction box for terrestrial solar-photovoltaic modules (GB/T 37410-2019)
- Technical requirements for photovoltaic grid-connected inverter (GB/T37408-2019)
- General principles low voltage switchgear and controlgear Part 1 (GBT14048.1/IEC60947-1)

Specifications

Model Function	AN1636H(F) ACW/DCW/IR	AN1638H(F) ACW/DCW/IR/GB	AN1639H(F) ACW/DCW/IR/GB/DCGB
AC withstand voltage (ACW)	5kVac/100mA (optional 200mA)		
DC withstand voltage (DCW)	6kVdc/20mA		
Insulation Resistance (IR)	6kVdc/100GΩ		
AC ground bond resistance (GB)	None	64Aac/600mΩ	
DC ground bond resistance (DCGB)	(Optional 40A, 60A)	None	40A DCGB card (optional 60A, 100A)
Multiple cards	Optional multi-channel ACW/DCW scanning card, multi-channel GB scanning card, and DC low resistance card; (When more than one card is inserted, additional 1U chassis height shall be added for each additional card, and 2U height for 100A DCGB card)		
Parallel	(Optional: Voltage division ratio, parallel ACW/DCW test between input-output-case; parallel GB and ACW/DCW test)		
Operation interface	Android system, 7" touch screen, RS232/LAN/WIFI/PLC/USB interface		
Informatization	Local store, data filter and export; barcode recognition and automatic program matching, MES system integration; optional HDMI interface, supporting external LCD display, keyboard/mouse;		
Dimensions (W×H×D mm)	426×132×520		

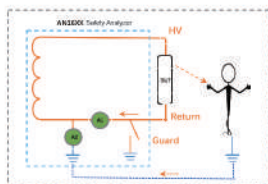
Parallel GB and ACW/DCW/IR test

This series Intelligent Safety Analyzer is designed with parallel GB, IR, ACW/DCW test, significantly shortening the testing time, double the production capacity of the production line.

Routine test for 4s	GB 2s	IR 1s	ACW 1s
Parallel test for 2s	GB 2s	IR 1s	ACW 1s

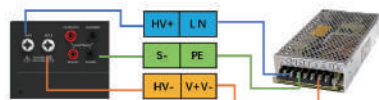
Protective design for operator safety

- When the Interlock control is enabled, this signal can be used as a detection signal for personnel entering the safety test area or for open grid gate of the test bench. Once the analyzer detects circuit break in this signal, the output will be stopped and the test cannot be started.
- DUT grounding. This series analyzer has two modes: DUT case grounding (Guard) or floating grounding (Return). When selecting Guard mode, the Return terminal of the analyzer will maintain safe conductive state with PE to prevent operators from accidentally touching the DUT housing and getting electric shock during ACW/DCW test process. In this mode, stray leakage current through the ground will pass through ammeter A1, causing higher leakage current and lower insulation resistance.
- Leakage protection GFI. When the leakage current of high-voltage output HV leaks to the safe PE terminal through the operator or DUT housing, the leakage current will be detected by ammeter A2. When it exceeds the limit, the analyzer will stop the high-voltage output and trigger GFI alarm.



ACW/DCW voltage division ratio setting, parallel test of multiple channels

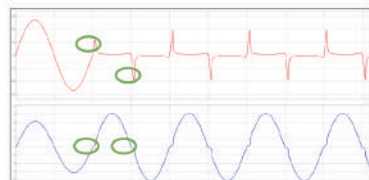
The series tester can be equipped with optional built-in positive and negative high voltage dual output modules, setting the output voltage ratio of positive and negative voltage, to achieve three parallel tests for power supplies: input terminals (LN) - PE, output terminals (V+V-) - PE, and input terminals (LN) - output terminals (V+V-).



Flashover and arc

In relevant electrical safety regulations and standards, the general requirement for determining electrical strength test is that under the specified test voltage and test time conditions, the insulator should not experience breakdown or flashover. The destructive discharge along the surface of an insulator is called flashover, while the destructive discharge along the interior of the insulator is called breakdown. Arc is gas discharge phenomenon, where instantaneous spark is generated when current passes through certain insulating media (such as air).

The series analyzer has arc detection function (ARC), arc levels of 0~9 can be set in ACW and DCW, to detect flashover or arc discharge during ACW/DCW test process.



Current and voltage waves of pure resistive arc discharge

Multiple optional cards



DC low resistance card
(0.1-20k Ω)



DCGB resistance card
(40/60A/100A)



5-channel high-voltage 3-channel
GB scanning card



8-channel high-voltage
scanning card



8-channel GB scanning
card