



HVDC Test Products

- Co-formed the industry product standards:
"ZBF24003-90 Portable DC HV Generator Common Technical Conditions"
"DLT 848.1-2004 HV Testing Equipment Common Technical Conditions, Part One: DC HV Generator"
- From the first PWM regulated DC HV generator in China developed in 1992, till today, the DC HV generator series has been sold to more than 1000 customers with 2857 sales volume
- DC HV Generators provide: output voltage 40~1200kV, and output current 2~300mA
- High stability $\leq 0.05\%$; Ripple $\leq 0.1\%$

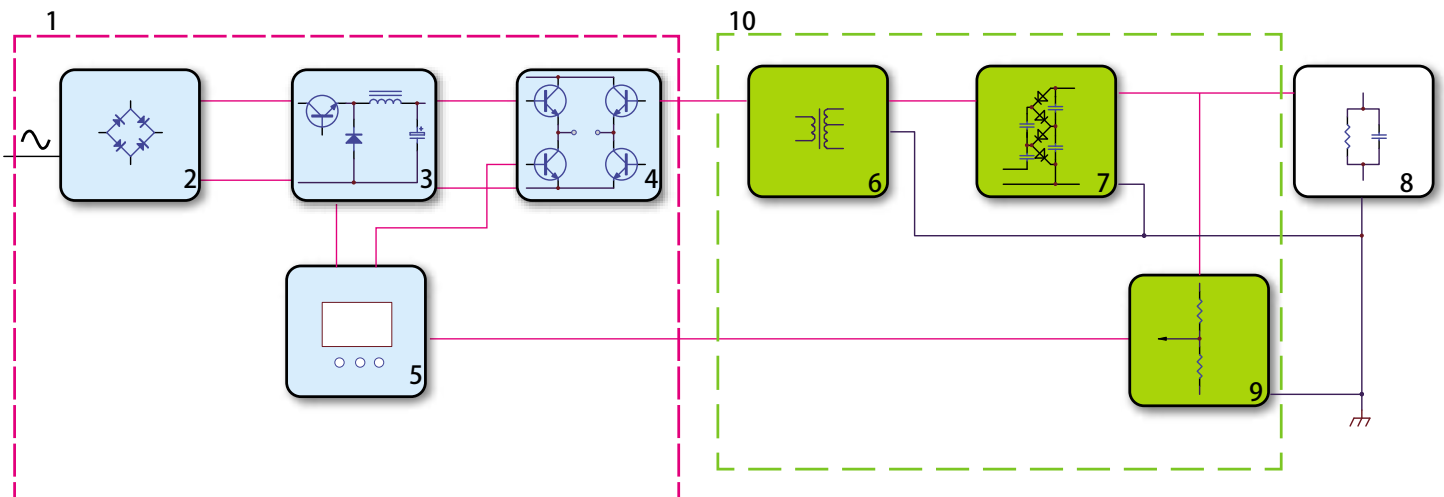
HVDC Test Products

Principle

AC power input is rectified into DC power by the rectifier, PWM regulated, and converted into mid-frequency rectangular waves by the bridge-type inverter; in the voltage-raising unit, the rectangular voltage is inverted and raised to the required test voltage through the mid-frequency transformer and voltage-multiplying circuit subsequently. The entire system is closed-loop controlled with multi-protection.

Application

- MOA lightning-arrester HVDC hi-pot
- HVDC hi-pot and leak current measurement for HV electrical equipment, such as transformer, switchgear, and oil-type power cable
- Leak current measurement for water-cooling DC power generators
- High-stability DC HV generators with high-precision DC voltage-divider for DC HV standardization



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|------------------------|----------------------|------------------|-----------------------------|------------------------------------|
| ① Power Control Unit | ② Rectifier | ③ PWM Regulation | ④ Inverter | ⑤ Closed-loop Control & Protection |
| ⑥ Mid-freq Transformer | ⑦ Voltage-multiplier | ⑧ Test Object | ⑨ Resistive Voltage-divider | ⑩ Voltage-multiplier Rectifier |

Main Feature

- Double-stage voltage-multiplier designed for various test requirements
- Control and voltage-multiplier unit can be integrated into one unit (40kV type) with power cable connected for convenience of on-site test
- ZV-B fully-shielded micro-ammeter: digital LCD covered by conductive glass joint with metal shell, test and shielding cable coaxially led out
- HV-B Infrared micro-ammeter (optional): Infrared connection, auto test individual and total leak current of double arresters
- Voltage auto-raise/multi-point test (upgraded Z-VII type): pre-set test voltage, test and record leak current on multi-level voltage
- Voltage-test open circuit protection, ground protection for the safety of operators
- Withstands HV arcing from large-capacity capacitive test object



China Southern Power Grid ±800kV on-site test in Guangdong

40kV Integrated Z-VI



Infrared Micro-ammeter



Technical Parameter

Ripple		≤1%				
Current Precision		≤1%				
Voltage Precision		1%±1 word				
Over-voltage Set Value Error		≤1%				
Output Voltage (kV)	Output Current (mA)	Output Power (W)	Control Unit Weight (kg)	Voltage-multiplier Weight (kg)	Voltage-multiplier Height (mm)	
40	3	120	--	--	--	
60	2	120	4	4	Φ110x520	
60	10	600	4	4.8	Φ110x570	
80	2	160	4	4.5	Φ110 x610	
100	2	200	4	4.8	Φ110x640	
120	2	240	4	5.2	Φ110x690	
200	2	400	4.6	7.5	Φ110x930	
200	3	600	4.6	7.5	Φ110x930	
200	5	1000	4.6	9	Φ110x930	
100/200	4/2	400	4.6	8.5	Φ110x1090	
300	3	900	6	11.7	Φ110x1350	
200/300	3/2	600	6	12.6	Φ110x1460	
200/300	4/3	900	6	12.8	Φ110x1460	
200/400	4/2	800	6	14	Φ110x2000	
200/400	6/3	1200	6	14	Φ134x2000	
300/600	6/3	1800	6	22	Φ170x2600	
800	10/20	8/16kW	12	40;55x2	Φ380x(1220+1300x2)	
1200	10	12kW	12	300x3	Φ600x(2336x3)	

Z-GW High-stability DC HV generator

High-stability DC HV generators are designed with high-precision DC voltage-divider, for DC high voltage standardization



500kV Typical System Parameter

Output Voltage	100/300/500kV; fine tunable; negative; zero-start
Voltage Stability	Output voltage fluctuation 10%~100%时 ≤0.05% (3min)
	Output voltage fluctuation ±5%, ≤±0.05%
	Output voltage fluctuation ±10%, ≤±0.1%
Ripple	≤0.1%
Output Current	5mA
Output Power	2.5kW
Voltage Precision	1.0% (read) ±1 word
Current Precision	1.0% (read) ±1 word
Power Unit Size	740 (L) ×440 (W) ×1100 (H) mm, 50kg
Voltage-multiplier	Φ360×3300mm, 100kg

ZV/T Water-cooling Power Generator Leak Current Tester

Maximum output current 300mA for water-cooling power generator leak current measurement; exclude the disturbance from water catchment polarization potential by using compensation circuitry



Technical Parameter

Model	60/200	60/300	80/200	80/300
Output Voltage(kV)	60	60	80	80
Output Current (mA)	200	300	200	300
Output Power (kW)	12	18	16	24
Voltage Error	≤1.0%±1word			
Current Error	≤1.0%±1word			
Voltage-setting Error	≤1.0%			
Ripple	≤3.0%			
Voltage Stability	≤1.0%			
Voltage Stability	AC380V(3phase4core) 50Hz		AC380V(3phase3core) 50Hz	
Control Case Weight (kg)	20	25	30	35
Voltage-multiplier Weight (kg)	60	65	80	90