

# TEST REPORT

NO. 091082G

Product Type: MASS-24(C)/T630-20

Name of Product: Gas-insulated Metal –enclosed Ring Main Unit  
(Ring Main Switch Module)

Client: Shenzhen Feiyue Switchgear Co., Ltd

Test category: Type Test

Issued by: **National Quality Supervision and Inspection Center for  
High Voltage Electrical Apparatus**

**Xi'an High Voltage Apparatus Research Institute Co., Ltd**



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Test Category		Type Test			
Product type		MASS-24(C)/T630-20 Gas-insulated Metal –enclosed Ring Main Unit			
Client		Shenzhen Feiyue Switchgear Co., Ltd (add. Tel...)			
Manufacturer		Shenzhen Feiyue Switchgear Co., Ltd			
Date of manufacture, No. (Test on Capacity & high pressure)		2009-03 0906012			
Date of manufacture, No. (Test on mechanics & temperature rise)		2009-03 0906011			
Main Technical data of the sample, provided by the manufacturer	Rated Voltage (kV)		24	Rate short-time power frequency withstand voltage (across isolating distance) (kV)	
	Rated Current (A)		630	79	
	Rated Frequency (Hz)		50	Rate lightning impulse withstand voltage (across isolating distance) (kV)	
	Rated Active Breaking current (A)		630	145	
	Rated breaking current for cable charge (A)		25	Main circuit Resistance ( $\mu\Omega$ )	
	Rated short-circuit making current (kA)		50 <sub>peak</sub>	Rated SF6 gas operating pressure (20°C) (Mpa)	
	Rated short-time withstand current (kA)		20	0.14	
	Duration of rated short-circuit time (main loop/ Earthing switch) (s)		4/2		
	Rated peak withstand current (kA)		50		
	Rated short-time power frequency withstand voltage (kV)		65		
	Rate lightning impulse withstand voltage (across isolating distance) (kV)		125		
	Technical Information guaranteed by client				
Note		The test on the sample provided by the client was carried out under the original packed and sealed condition, no any extra adjustment works on it.			
Representative of the client: XX					
Date of Test		from 2009-07-09 to 2010-03-12			

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<b><u>Testing conclusion</u></b>			
Client:	Shenzhen Feiyue Switchgear Co., Ltd		
Product type:	MASS-24(C)/T630-20		
Name of product:	Gas-insulated Metal –enclosed Ring Main Unit		
Manufacturer:	Shenzhen Feiyue Switchgear Co., Ltd		
Test category:	Type Test		
Test items of carried out:			
	Check on degree of Protection (enclosure: IP3X)		
	Measure on main circuit Resistance ( $\leq 140\mu\Omega$ )		
	Temperature rise test (1.1 x 630A)		
	Mechanical characteristics & Mechanical operation test		
	Test on mechanical endurance (5000/2000times – Ring main switch/earth switch)		
	On short-time power frequency withstand voltage (phase-phase, to earth 65kV 1min)		
	(across isolating distance 79kV 1min)		
	On lightning impulse withstand voltage (phase-phase, to earth 125kV)		
	(across isolating distance 145kV)		
	On breaking & making capacity of active breaking current (24kV 630A 10times)		
	(24kV 31.5A 20times)		
	On breaking & making capacity of distribution circuit current (4.8kV 630A 10times)		
	On breaking & making capacity of cable charge current (24kV 25A 10times)		
	(24kV (5-10)A 10times)		
	On making capacity of rated short-circuit making current		
	(ring main switch: 24kV 50kA(peak), 2 times)		
	On breaking & making capacity of rated earth fault current (24kV 63A 10times)		
	On breaking & making capacity of cable charge current under the condition of earth fault		
	(24kV 43.3A 10times)		
	On Short-time withstand current & peak withstand current		
	(Main ring loop: 4s 24kV 50kA(peak))		
	(Earth switch : 2s 24kA 50kA(peak))		
In accordance with:			
	GB 3906-2006	3.6kV-40.5kV	AC metal-enclosed switchgear & control-gear
	GB 3804-2004	3.6kV-40.5kV	High voltage AC load switch
<b><u>Testing conclusion:</u></b>			
All testing results of a/m items complied with the relative requirements, relative performance of the sample is qualified.			
(Sealed by National Quality Supervision and Inspection			
Center for High Voltage Electrical Apparatus)			
Complied by: XX	Checked by: X X	Authorized by: XX	Approved by: XX
Date:2010/04/13	Date:2010/04/23	Date: 2010/04/23	Date: 2010/04/24
<b>(Sealed by Xi'an High Voltage Apparatus Research Institute Co., Ltd)</b>			

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<b>Technical data of main components fitted on H.V Switchgear</b>		
<b>1. Ring main switch</b>	(3 position)	
Model	LBS-24(C)/T630-20	
Rated voltage (kV)	24	
Rated current (A)	630	
Rated Frequency (Hz)	50	
Rated Active Breaking current (A)	630	
Rated breaking current of distribution closed-loop (A)	630	
Rated breaking current for cable charge (A)	25	
Rated short-circuit making current (kA)	50peak	
Rated short-time withstand current (kA)	20	
Rated peak withstand current (kA)	50	
Duration of rated short-time withstand current (ring main switch) (s)	3	
Duration of rated short-time withstand current (Earth switch) (s)	2	
Model/Name of operation mechanism(ring main switch & earth switch)	Manual, springs type.	
Rated SF <sub>6</sub> gas operating pressure (20°C) (Mpa)	0.045	
Delivery date	/	
Serial No.	/	
Manufacturer	Shenzhen Feiyue Switchgear Co., Ltd	
<b>2. Busbar</b>		
Spec. & Size (mm <sup>2</sup> )	Copper, 240	

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**Inspection on degree of protection**

Date of Test: 2009-08-05

**1. Details of checking**

No.	Checking process	Checking status
1	Relative standard inspection tools can/can't pass through the holes on enclosure or partition.	No
2	While the inspection tools plug into these holes (a/m), it will/won't cause the dielectric strength weaker and less than rated insulation level	/
3	While the inspection tools plug into these holes (a/m), it will/won't touch the moving parts inside the enclosure.	/
4		

**2. Inspection results:**

The enclosure matched the requirements of IP3X degree of protection