LW36-126

Outdoor high voltage AC sulfur hexafluoride circuit breaker

Overview

LW36-126/3150-40 self-energized AC high-voltage sulfur hexafluoride circuit breaker is an outdoor product, suitable for use in power grids with an altitude of no more than 2000 meters (products with an altitude of more than 3000 meters can be designed), an ambient temperature of not less than -40℃ , and a pollution level of no more than 50Hz in AC, with a maximum voltage of 126kV in the IV level area. It is used to cut off the rated current, fault current or convert the line to achieve control and protection of the power system. It can also be used as a connecting circuit breaker.

This product uses SF6 gas as the arc extinguishing and insulating medium, adopts the most advanced international self-energized arc extinguishing technology, and is equipped with a new spring operating mechanism. It has the characteristics of long electrical life, low operating power, low noise, and high reliability. It has a simple structure, small size, and a long maintenance cycle. In the current process of power equipment tending to be oil-free and large-capacity, it can completely replace imported products of the same type.

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Model meaning

L	W	36	-	126	(W)	/	T	3150	-	40
↓	↓	↓		↓	↓		↓	↓		↓
SF6 circuit breaker	Outdoor type	Design sequence number		Rated voltage (kV)	Anti-fouling type		Spring mechanism	Rated current (A)		Rated short-circuit breaking current (kA)

Main technical parameters

Main mechanical parameters of circuit breaker

Item		Unis	Argument
Rated voltage		kV	126
Rated power frequency withstand voltage	To ground	kV	K•230
	Between breaks		K•265
Rated lightning impulse withstand voltage	To ground		K•550
	Between breaks		K•630
Power frequency withstand voltage (5min) at retail gauge pressure of SF6 gas			K•95
Rated frequency		Hz	50
Rated current		A	3150
First opening coefficient			1.5
Rated short-circuit breaking current		kA	40
Rated short-circuit closing current (peak value)		kA	100
Rated short-circuit withstand current			40
Rated peak withstand current			100
Rated short-circuit duration		s	4
Rated out-of-step breaking current		kA	10
Near-zone fault breaking current		kA	90%IK,75%IK
Rated line charging breaking current		A	31.5
Rated operation sequence			O-0.3s-CO-180s-CO
Main circuit resistance		μΩ	≤ 40
Rated sulfur hexafluoride gas pressure (20℃ gauge pressure)		Mpa	0.6
Alarm/minimum functional pressure (20℃ gauge pressure)		Mpa	0.55±0.03/0.50±0.03
Sf6 gas annual leakage rate			〈0.5%
Gas moisture content (V/V)			≤ 150×10-6
Mechanical life		frequency	10000
Radio interference level		μV	≤ 500
Creepage distance	Between fractures	mm	3906/3150
	To the ground		3906/3150
The quality of SF6 gas filled in each unit		kg	10
The quality of each circuit breaker		kg	1500

Note: External insulation is corrected according to the altitude correction factor K: K-1.13 for every 2000m above sea level; K=1.28 for every 3000m above sea level

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Main technical parameters

Main technical parameters of the mechanism

Item		Unis	Argument
Auxiliary circuit voltage		V	DC220 or DC110
Opening and closing coil voltage/current		V/A	DC110/4；DC220/2
Energy storage motor	Rated voltage	V	DC220、AC220/DC110、AC110
	Normal operating voltage range	V	85% ~ 110%
	Power	W	600
Motor energy storage time		s	≤ 15
Heater and lighting circuit voltage		V	AC220
Auxiliary switch rated voltage		V	DC220、AC220
Auxiliary switch rated current		A	10
Auxiliary switch contacts			10 normally open + 10 normally closed

The mechanical adjustment of the product is shown in the table below.

Item	Unis	Argument
Center distance between circuit breaker poles	mm	1750
Moving contact stroke	mm	120^{+3}_{0}
Moving contact contact stroke	mm	25^{+2}_{0}
Cycle length of circuit breaker interphase operating link	mm	110^{+3}_{0}
Opening speed	m/s	4.2-5m/s
Closing speed	m/s	2.2-3 m/s
Opening time	ms	≤ 40
Closing time	ms	≤ 100
Opening time	ms	≤ 60
Closing-opening time	ms	≤ 80
Opening-closing time	ms	300
Three-phase opening phase difference	ms	≤ 2
Three-phase closing phase difference	ms	≤ 3

Structural features

◆ The circuit breaker adopts a three-phase porcelain column single-break structure, with a spring operating mechanism for three phases, arranged in the center, and three phases in motion, so the appearance is novel and exquisite. The circuit breaker uses SF6 gas as the insulation and arc extinguishing medium. During operation, the three-pole SF6 gas of the circuit breaker is connected, and a pointer-type density relay is used to monitor its pressure and density progress. Due to the self-energy arc extinguishing principle and the optimized design in the circuit breaker movement system, the mechanical efficiency is effectively improved and the operating work is minimized;

◆ Excellent breaking performance and long electrical life;

◆ The mounting frame and support are made of high-quality steel plates that are integrally bent, and the surface treatment is all hot-dip galvanizing. All exposed fasteners are made of high-strength materials and hot-dip galvanized, or stainless steel standard parts. The mechanism box shell is made of stainless steel, so the product has excellent corrosion resistance;

◆ High mechanical reliability and can be operated frequently;

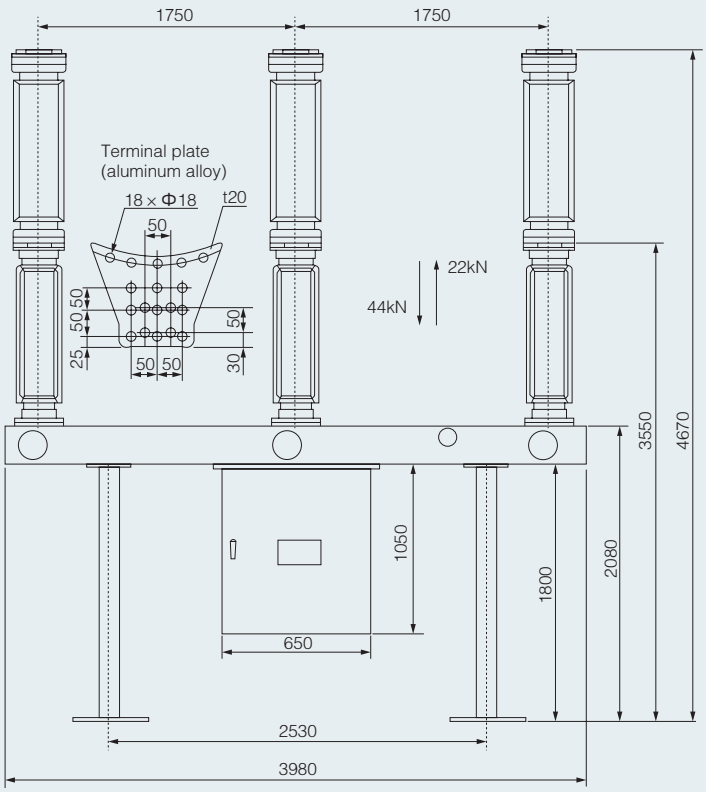
◆ Due to the inherent high insulation strength of hexacyanofuric acid gas and the optimal contact movement of the circuit breaker, the circuit breaker breaks the capacitive current without reignition;

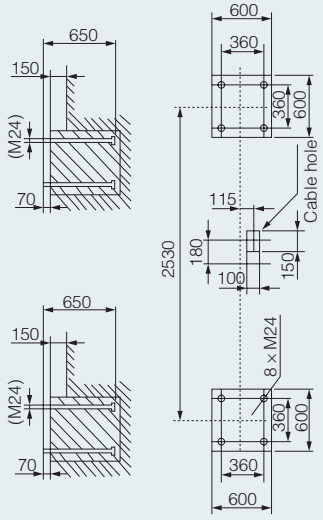
◆ The external insulation level is high, the external insulation is designed with a large creepage distance, the creepage ratio distance ≥ 31mm/kV, and the dirt resistance is excellent. It can also operate safely in harsh environments;

◆ Strong current carrying capacity. The temperature rise test is carried out at 1.2 times the rated current of 3150A, that is, 3780A. There is still a large margin for temperature rise at each point;

◆ The overall appearance and structure of the product are compact, and on-site installation and debugging are convenient, with low maintenance workload.

Dimensions and mounting dimensions (mm)





LW36-126 circuit breaker mass: 1500kg.

Windward area: 4.7m^2