

Opzts Intelligent Composite Switch

Operation manual

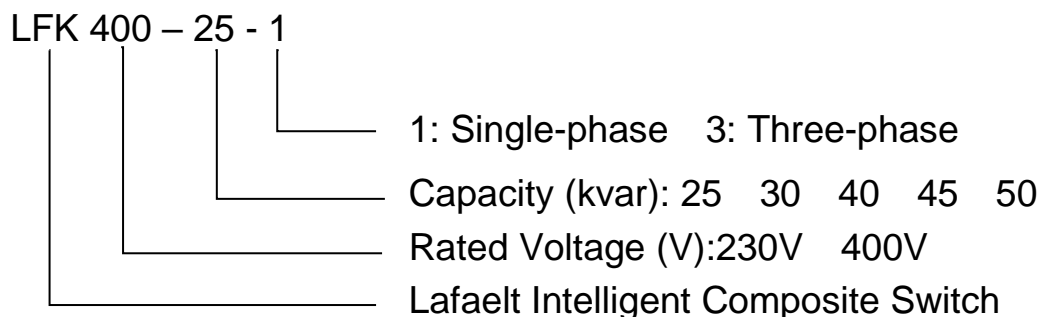


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Overview

The intelligent composite switch combines the advantages of low energy consumption of mechanical contacts and no operating arc of solid-state relays to realize zero-crossing, no inrush current connection and no arc breaking of the relay, and ensure voltage zero-crossing input and current zero-crossing cut-off when switching capacitors. When the switch is on and off, the inrush current is small, there is no overvoltage, and the contacts are not sintered; the voltage drop is small during operation, the energy consumption is low, and no harmonics are generated. The technology, performance and reliability of this product are at the leading level at home and abroad. It is suitable for the control of low-voltage reactive power compensation capacitors, heating wires, lamps, motors, resistors and other loads. It is a new type of green and eco-friendly intelligent low-voltage switch.

Model Description



Product Features

1. Using the industry-leading core patented technology, the on-on time of the thyristor of the intelligent switch is less than a quarter of a cycle (typical value 1 millisecond), and the on-off time is less than half a cycle (typical value 2 milliseconds). It has a very high tolerance to the instantaneous load fault surge current, can effectively resist the self-healing discharge current of the load capacitor, and greatly reduces the fault probability of the switch.

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It solves the problems of short electrical life, large inrush current, fast burning of mechanical contacts, adhesion, and easy breakdown and poor reliability of traditional composite switch thyristors in the market.

2. Adopting unidirectional thyristor design, compared with the traditional composite switch using bidirectional thyristor, it has extremely high dv/dt and di/dt suppression ability, avoiding problems such as thyristor breakdown caused by misconduction.
3. The patented technology of capacitive energy storage zero-crossing trigger effectively avoids the problems of easy breakdown and misconduct of high-voltage optocouplers, and electromagnetic interference caused by the use of trigger transformers.

Usage Condition

Environment Temperature: $-25^{\circ}\text{C} \sim +45^{\circ}\text{C}$

Rated Frequency: 50/60Hz

Circuit Power Consumption: $\leq 1\text{VA}$

Contact Voltage Drop: $\leq 0.1\text{V}$

Relative Humidity: at 40°C , 20%~90%

Rated Working Voltage: 450V/250V AC

Phase Number: three-phase (Δ type connection, Angle involution connection), single-phase (Y type connection)

Each turn-on and turn-off interval: $\geq 1\text{s}$

Interval between two consecutive connections: $\geq 10\text{s}$

Contact Withstand Voltage: $\geq 1600\text{V DC}$

Control Signal: 12V DC

Service Life: 500 thousand times

Control Capacity Table

Phase	Model	Capacity	Mark
Three-phase	LFK400-25-3	$\leq 25\text{kvar}$	
	LFK400-30-3	$\leq 30\text{kvar}$	

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	LFK400-40-3	≤40kvar	
	LFK400-45-3	≤45kvar	
	LFK400-50-3	≤50kvar	
Single-phase	LFK230-20-1	≤6.7kvar	
	LFK230-25-1	≤8.3kvar	
	LFK230-30-1	≤10kvar	
	LFK230-40-1	≤13.3kvar	
	LFK230-45-1	≤15kvar	
	LFK230-50-1	≤16.7kvar	
	LFK400-25-1	≤8.3kvar	Angle inscribed, phase compensation can be separated
	LFK400-30-1	≤10kvar	
	LFK400-40-1	≤13.3kvar	
	LFK400-45-1	≤15kvar	
	LFK400-50-1	≤16.7kvar	

Note: control voltage and current: 6~16V DC, 5~20mA, can also be selected according to customer requirements

Protection Function

Using single-chip microcomputer to control switching and intelligently monitor the operation status of thyristor and load, with the following protection functions:

1. Voltage fault and loss phase protection
2. Self- diagnostic fault protection
3. No-load protection
4. Power failure protection
5. Lockout protection (the magnetic latching relay is only allowed to be put in after the thyristor is put in)

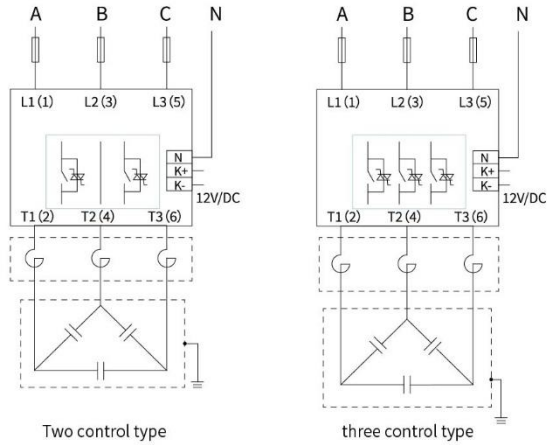
Note: The magnetic latching relay is used inside the intelligent composite switch. If a strong impact is encountered during transportation, the contacts may be closed and the switch will be in a conductive state. If this happens, you can connect the three-phase input terminal of the switch

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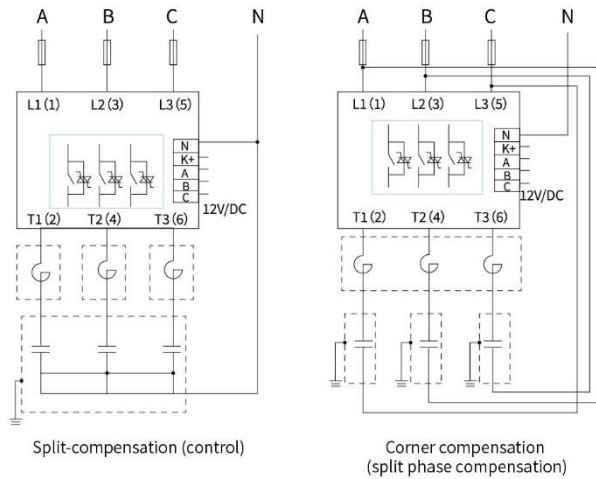
to 380V power supply, wait for 10 seconds and then cut off the power supply, and the switch will automatically return to the “OFF” state

Wiring Diagram

Note: The reactor is selected according to the needs, and the capacitive load can be other loads

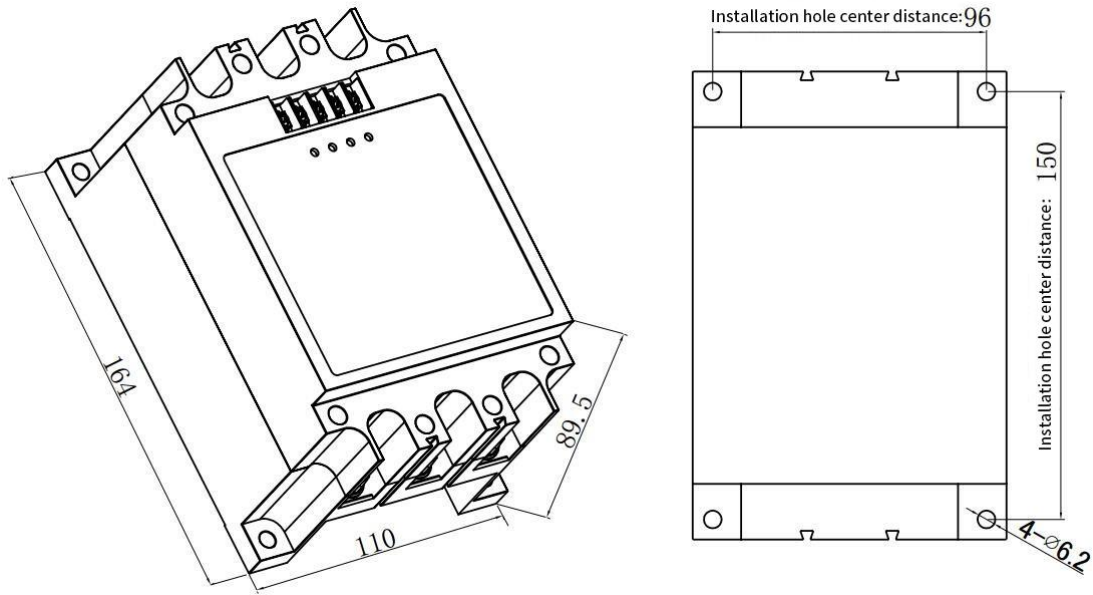


Note: If switching indicator light is required, it must be installed between phases



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Installation dimensions (unit: mm)



Jiangsu Lafaelt Electric Co.,Ltd

Hotline: 400-882-1973

Tel: +86 0510-81811717

Email: marketing@lafaelt.com

Sales Center Add: 2nd Floor, No. 268, Tongxie Road, Changning District, Shanghai, China

Factory Add: No. 79, Qunxing Road, Xinwu District, Wuxi City, Jiangsu Province, China

Net: www.lafaelt.cn