

# SF6 LOAD BREAK SWITCH

INNOVATION CHANGE LIFE

FARADY PRODUCT GUIDE

LW3F SERIS 15KV/27KV/38KV

## PRODUCT OVERVIEW



### General

LW3F type pole-mounted SF6 load break switch was used in 12kV, 24kV, 33kV rated voltage, rated current 400/630A; 50/60HZ with the load current; over load current of power line open circuit and opening and closing electric systems. The switch can be equipped with a controller with most advanced technical parameters. LW3F-A type LW3F is a manually LBS for choice. LW3F-M type LW3F is an intelligent type LBS for choice. It can automatically disconnect when the distribution line has broken down. It can be operated by handle; implemented electromotion and distant. The electric controller was installed in a stainless steel cabinet. So it can be used in any conditions.



### Service Condition

- a) Air temperature:  
Maximum temperature: +40 ; Minimum temperature: -20
- b) Humidity:  
Monthly average humidity 95%; Daily average humidity 90% .
- c) Altitude above sea level:  
Maximum installation altitude: 2500m
- d) Ambient air not apparently polluted by corrosive and flammable gas, vapor etc.
- e) No frequent violent shake

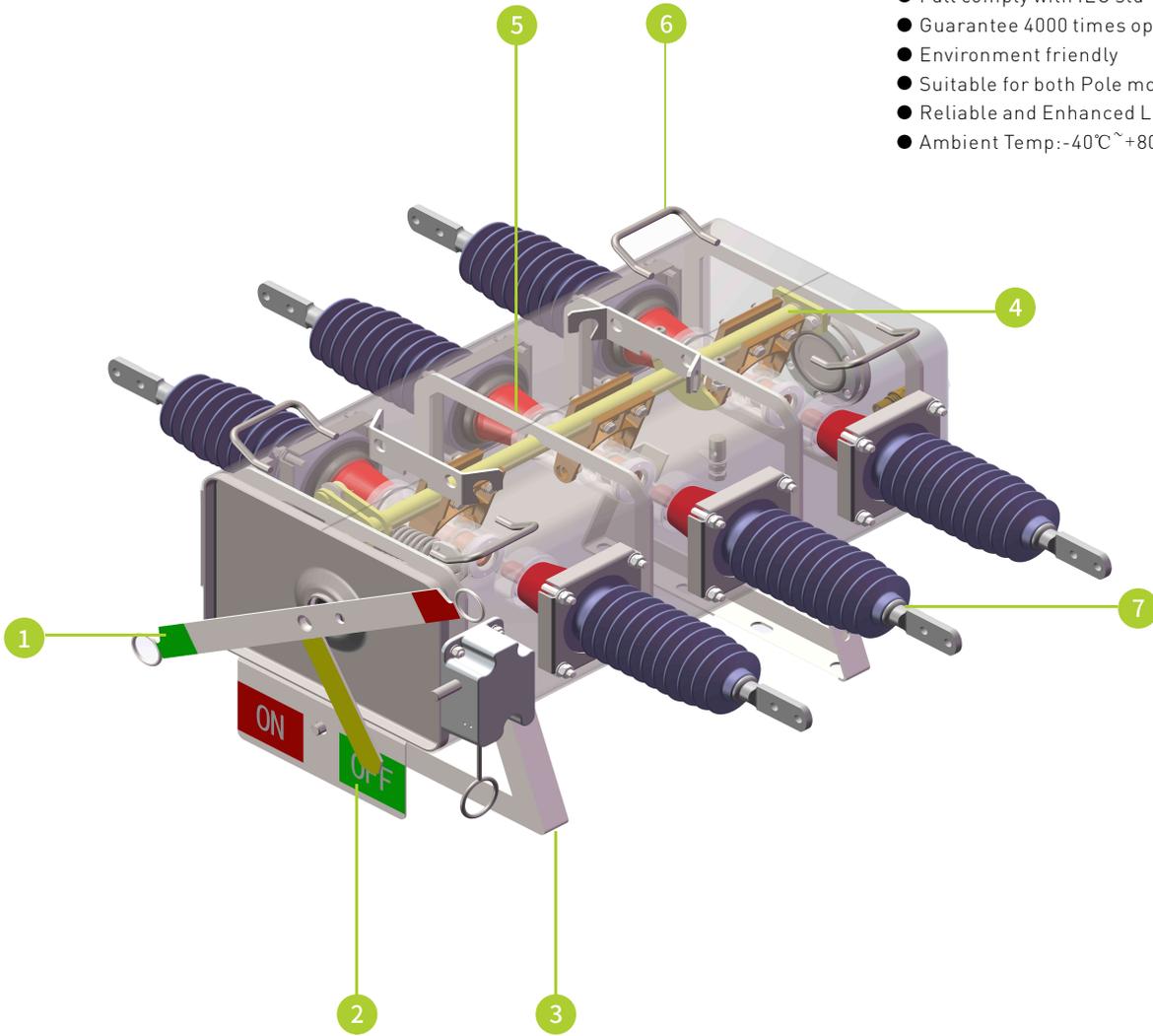
## TECHNICAL DATA

No	Item	Unit	Data
1	Rated voltage	kV	12-20-33
2	Rated current	Hz	50/60
3	Rated insulation level (with SF6 gas 0.07Mpa)	lightning impulse voltage	kV 75/125/170
		Power frequency impulse voltage	kV 42/50/70
5	Rated current	A	630
6	Rated open circuit load current (0.07Mpa//20℃ /h)	A	630
7	Open circuit current under 0 pressure	A	630
8	Rate peak value withstand current	kA	50
9	Rated short-time closing current	kA	50
10	Rated short-time withstand current	kA/s	20/1
11	Rated electric cable charge open circuit current	A	25
12	Rated wire charge open circuit current	A	16
13	Rated closed loop open circuit current	A	630
14	Excitation current	A	21
15	Rated current open circuit times		400 times
16	Rated working pressure	MPa	0.07
17	Each operating voltage and resistance	μΩ	150
18	Gas relative leakage rate	year	1%
19	SF6 gas moisture content	Leave factory relative figure	ppm 150
		Switch working figure	ppm 300
20	Machine stable operation	times	6000
21	Rated operating voltage and assistant loop rated voltage	V	DC220;110
			AC 220;110
22	Weight	M type	kg 115
		A type	kg 135

# PRODUCT STRUCTURE

## Product Characters:

- High quality porcelain or Rubber bushing
- Full comply with IEC std
- Guarantee 4000 times operations
- Environment friendly
- Suitable for both Pole mounted or Hanging mounted
- Reliable and Enhanced Life Expectancy
- Ambient Temp: -40°C~+80°C



- |                       |                     |                        |
|-----------------------|---------------------|------------------------|
| ① Operation Handle    | ② ON/OFF Indication | ③ Installation Bracket |
| ④ Operating Mechanism | ⑤ Interrupter       | ⑥ Hanging Lug          |
| ⑦ Cable Bushing       |                     |                        |

# CONTROLLER

## CONTROLLER

### 1.1 Description

Voltlogic series line sectionalizing load break controller is medium voltage overhead line grid monitoring unit, It can combined with load break switch for achieve of measure monitoring, fault analysis and event records. It gives us a safety power grid for cutting line fault and automatic recovery operation and power automation.

The controller is gathering with line protection, control, measurement and monitoring of voltage and current signals integrated automation and control devices outdoors.

The controller is a automatic management unit for single way/multi ways/ring network /two power sourcing, provided with all voltage and current signals and all functions.

The controller column switch intelligent controller supports:Wireless (GSM/GPRS/CDMA), Ethernet mode, WIFI, optical fiber, power line carrier, RS232/485, RJ45 and other forms of communication, and can access other station premises equipment (such as TTU, FTU, DTU, etc.).



### 1.2 Protection functions

Protection functions	ANSI code	Name in Device
Phase overcurrent	50P	P.OC
Overload	49	Overload
Phase Time-Overcurrent	51P	P.Curve
Ground Overcurrent	50G/N	E.F
Recloser	79	Reclose
Phase overcurrent cold load pick-up	CLPU 50	Cold Load
Switch-Onto-Fault		SOTF
Undervoltage	27	Under volt
Overvoltage	50P	P.OC

### 1.3 Metering

- Phase current IA, IB, IC RMS, Zero Sequence
- Voltage Uab, Ubc, Uca, U0
- Active power, reactive power and power factor
- Frequency

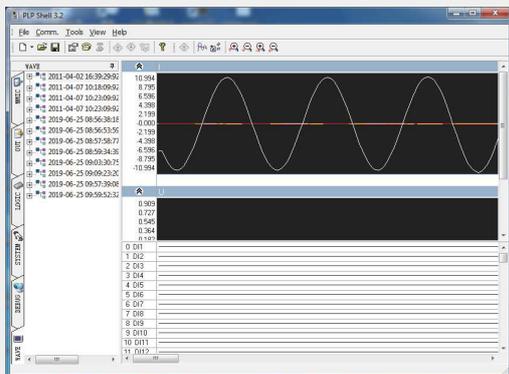
### 1.5 Features

- Protection configuration is complete, and all protection functions can be switched on and off flexibly.
- 13 channels digital signal input.
- 4 channels current measure.
- 6 channels voltage measure.
- Large capacity flash memory can record at least 100 times of historical events and no data will loss even the power is off.

### 1.6 Records

- Trip logs
- SOE logs
- Alarm Logs

### 1.8 HMI Software

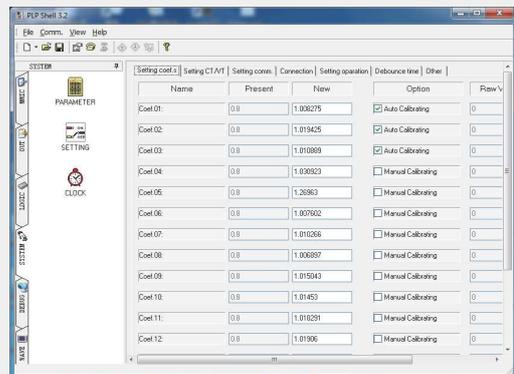


### 1.4 Control and monitoring

Switch control	94
Lockout Relay	86

### 1.7 Communication

- RS485, RS232 port and Ethernet
- Protocols -IEC60870-5-101, IEC60870-5-104 IEC61850 or Modbus RTU,DNP3.0



# TECHNICAL DATA

## 2.1 Inputs and Outputs

### Phase Current Inputs

Parameter	Range
Quantity	3
Rated Current In	5A
Measuring Range	20 x In
Instrumentation $\geq 0.1xIn$	$\pm 1\% In$
Frequency	50/60Hz
Thermal Withstand:	
Continuous	2 x In
10 Second	10 x In
1 Second	40 x In
Burden @ In	$\leq 0.2VA$ (5A Phase element)

### Voltage Inputs

Parameter	Range
Quantity	3
Nominal	40...264 Vrms
Operating Range	0...264 Vrms
Instrumentation $\geq 0.8xVn$	$\pm 1\% Vn$
Burden @ 110V	0.06 VA
Overvoltage Withstand	280 Vrms

### Sensitive Earth Current Inputs

Parameter	Range
Quantity	1
Rated Current In	1A
Measuring Range	2 x In
Instrumentation $\geq 0.1xIn$	$\pm 1\% In$
Frequency	50/60Hz
Thermal Withstand:	
Continuous	2 x In
10 Second	10 x In
1 Second	40 x In
Burden @ In	$\leq 0.02VA$ (1A Earth element)

### Auxiliary Supply

Parameter	Range
DC Voltage	220V Range 110 to 265V
AC Voltage	220 V AC 50/60Hz Range 165 to 265Vrms AC 50/60Hz $\pm 5\%$
Power consumption	$\leq 100W/300W$

## 2.2 Unit Design

Parameter	Range
Indication	16 Character 8 line Display 10 LED's
User Interface	11 Navigation Keys
Weight	25kg

## 2.3 COMMUNICATION

Parameter	Range
Communication Port	RS485, RS232, Ethernet
Protocols	IEC60870-5-101 IEC60870-5-104 IEC61850 MODBUS RTU

## 2.4 Data Storage

Parameter	Range
Events	1000 times
Storage time	60days

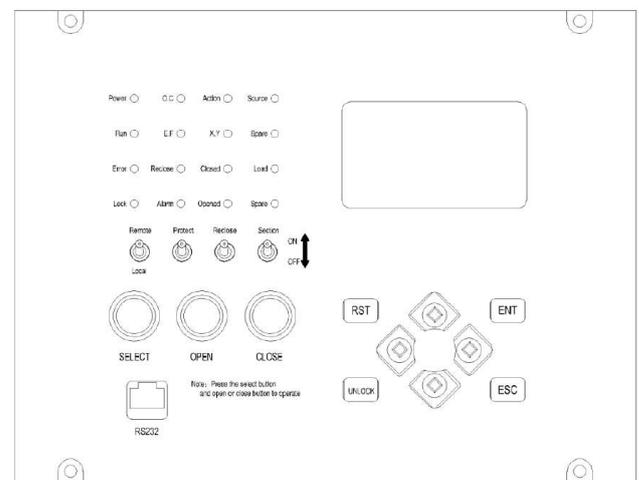
## 2.5 Climatic Tests

Temperature --- IEC 60068-2-1/2

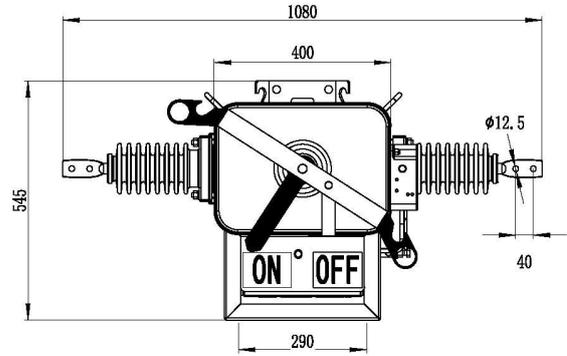
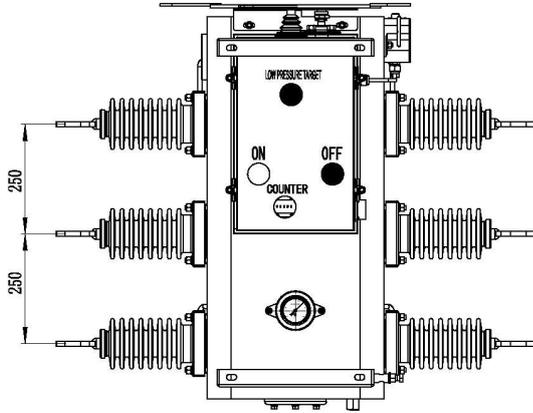
Parameter	Range
Display range	-25°C to +60°
Storage range	-40°C to +70°

## Section 4 User Interface

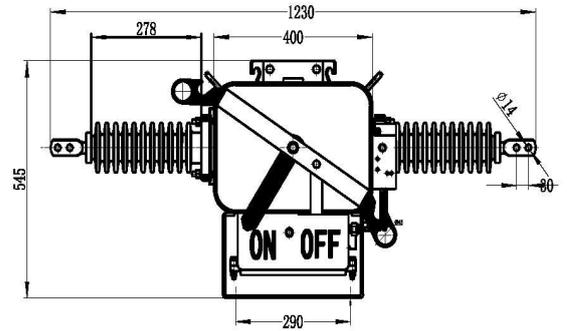
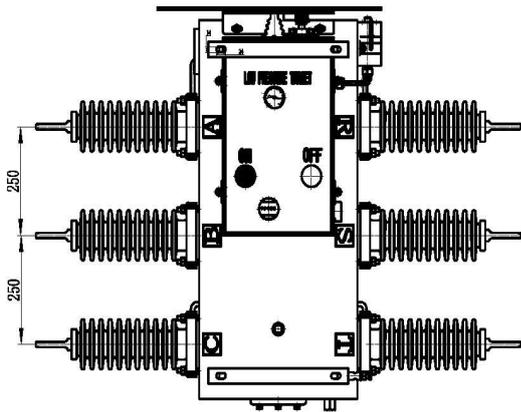
The operator interface is designed to provide a r friendly method of controlling to user, viewing menus, entering settings and retrieving data from the relay. Four buttons are provided for navigation around the menu structure.



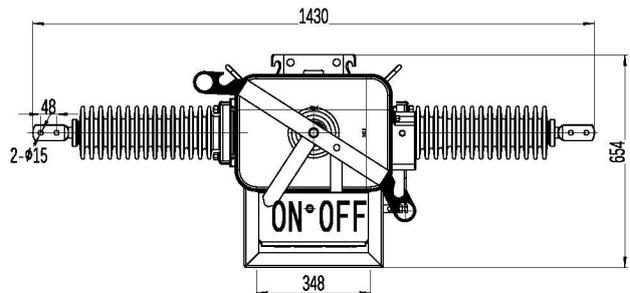
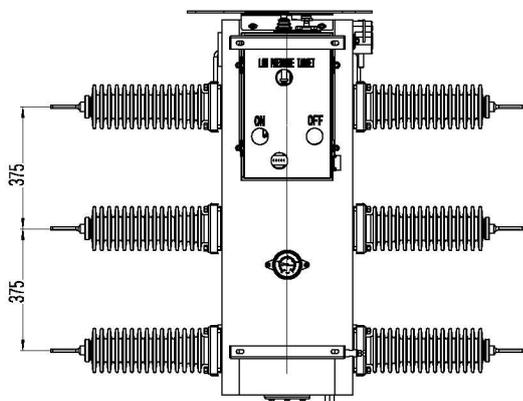
# DIMENSIONS



**15KV SF6 LOAD BREAK SWITCH**



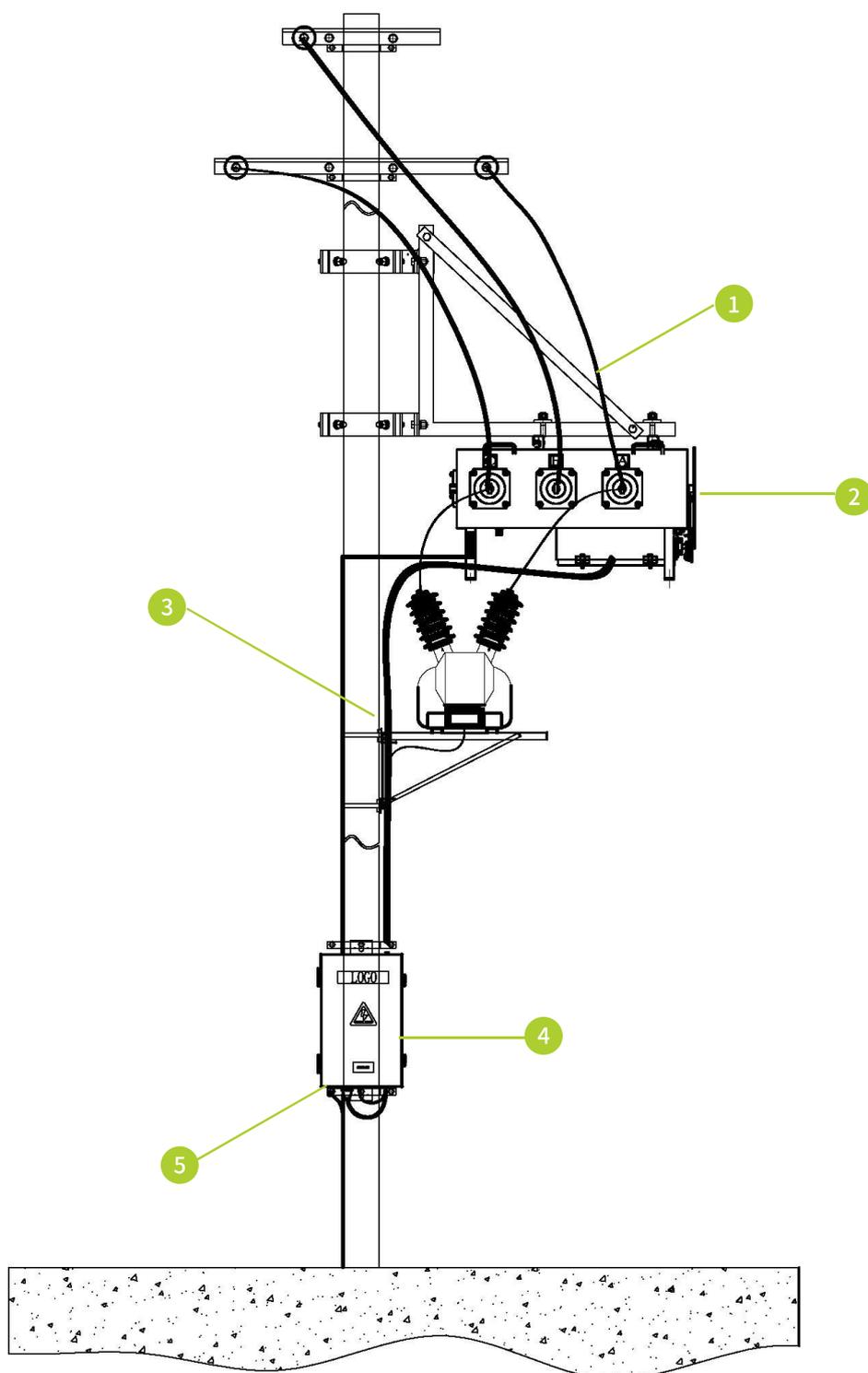
**24KV SF6 LOAD BREAK SWITCH**



**36KV SF6 LOAD BREAK SWITCH**



## INSTALLATION



- ① Power Cable
- ② Load Break Switch
- ③ PT
- ④ Controller
- ⑤ Ground cable

INNOVATION CHANGE LIFE

#### MISSION

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#### VALUES

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#### WISHES

Committed to be world class M.V. equipment electrical expert

Customer trust, give employee ownership

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