



PRODUCT GUIDE



VCB Pole Mounted Recloser ZW32 – 12/24/36kV models

VCB Pole Mounted Recloser

INTRODUCTION - OVERVIEW

ZW32 series vacuum circuit recloser, produced by Gopower pole mounted auto recloser manufacturer, is used in distribution systems. Pole mounted auto reclosers are used to make and break normal and fault currents. VCB pole mounted auto reclosers are fully equipped with sensors and a controller to provide protection and control. In case of a line fault, the pole mounted recloser, an automatic vacuum circuit recloser, can break and make currents several times, thus avoiding longer network interruptions due to temporary faults.

As an electric power equipment company, we manufacture, design, and test the pole mounted auto recloser based on current standards IEC 62271. Gopower, which is the standard for China VCB circuit breaker manufacturer to produce qualified vacuum circuit reclosers and offer satisfying services for the customers. If you want to buy an auto recloser circuit breaker, please contact us, because our electrical recloser circuit breaker price is competitive in the recent market..



Types of Auto Recloser Circuit Breaker

Outdoor auto recloser circuit breaker, also known as an outdoor pole mounted load break switch, is an indoor power distribution 3 phase recloser in 12kV, 24kV, 36kV, vacuum circuit breaker can be used for the protection and control of electrical equipment in industrial and mining enterprises, power plants and substations. The outdoor auto recloser circuit breaker is especially suitable for places requiring no oil, less maintenance and frequent operation. The auto recloser circuit breaker as pole top switches can be configured in central cabinet, double-layer cabinet and fixed cabinet as control and protection of high-voltage electrical equipment.

Advantages of VCB Vacuum Circuit Recloser

VCB Pole mounted recloser is named because its arc extinguishing medium and insulating medium of contact gap after arc extinguishing is high vacuum. Pole mounted recloser, based on the working principle of vacuum circuit breaker, has the advantages of small volume, lightweight, suitable for frequent operation and arc extinguishing without maintenance. Vacuum type circuit breaker is widely used in a distribution network.

Auto Recloser Working Principle

Auto recloser circuit breaker, referred to as recloser pole, is a high-voltage switchgear with its own control and protection functions. Automatic circuit recloser can automatically detect the current passing through the main circuit of the recloser, automatically disconnect the fault current according to the inverse time limit protection in case of fault, and reclose multiple times according to the predetermined delay and sequence.

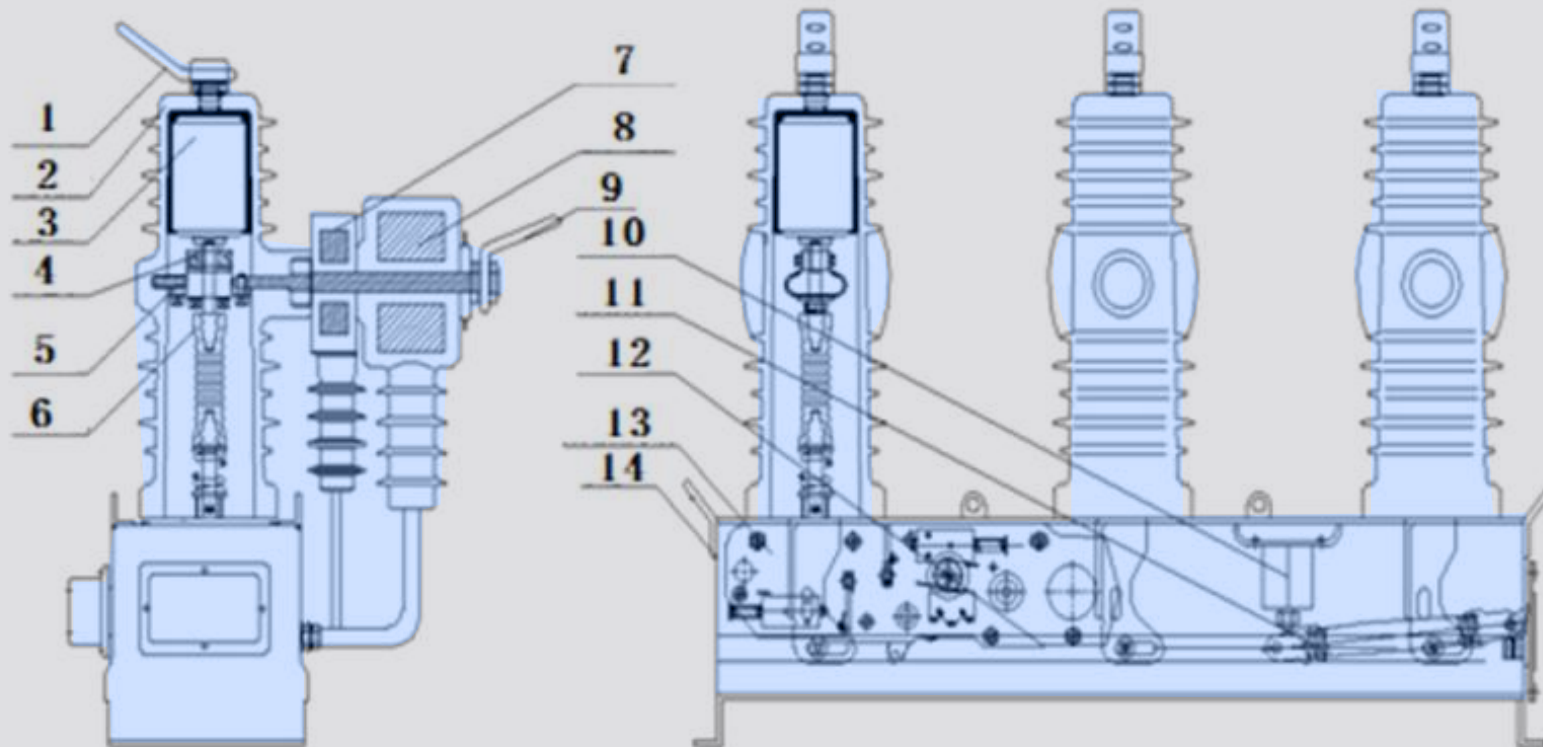


TECHNICAL DATASHEET

	TYPE	ZW32-12	ZW32-24	ZW32-36
Basic ratings	Maximum system voltage	12kV	24kV	36kV
	Rated continue current	630A	630A	630A
	Rated frequency	50/60Hz	50/60Hz	50/60Hz
	Short-time withstand current	20kA/4s	20kA/4s	20kA/4s
Making & Breaking capacity	Mainly active load current	630A	630A	630A
	Short-circuit making current (peak)	50kA	50kA	50kA
	Number of making operation	30 times	30 times	30 times
	Cable Charging Current	25A	25A	25A
	Line Charging Current	1.5A	1.5A	1.5A
	Closed Loop Circuit Current	630A	630A	630A
	Transformer Magnetizing Current	22A	22A	22A
Power frequency withstand current test	Dry - 1min, ph - ph, ph - earth	42kV	65kV	95kV
	Dry - 1min, Across Interrupter	48kV	79kV	110kV
Impulse withstand current test (1.2/50μs)	Ph - ph, ph - earth	75kV	125kV	185kV
	Across Interrupter	85kV	145kV	215kV
Other	Internal Arc test	20kA/0.1s	20kA/0.1s	20kA/0.1s
	Creepage distance (silicon)	380mm	850mm	1180mm
	IP level	67	67	67
	Arc Extinction Medium	Vacuum	Vacuum	Vacuum
	Insulation Medium	Vacuum	Vacuum	Vacuum
Operation performance	Closing/Opening time	60/40ms	60/40ms	60/40ms
	Mechanical operations	10.000 times	10.000 times	10.000 times
	Operating temperature	-25 ~ +70oC	-25 ~ +70oC	-25 ~ +70oC

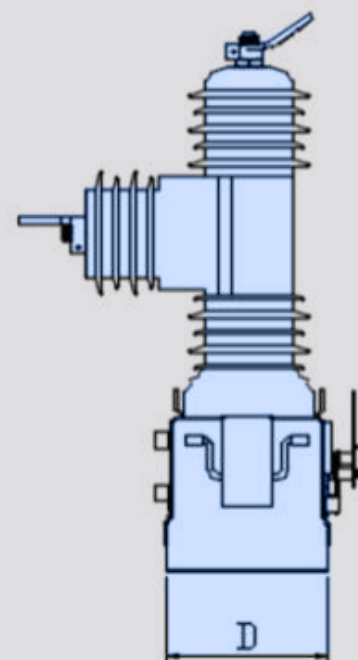
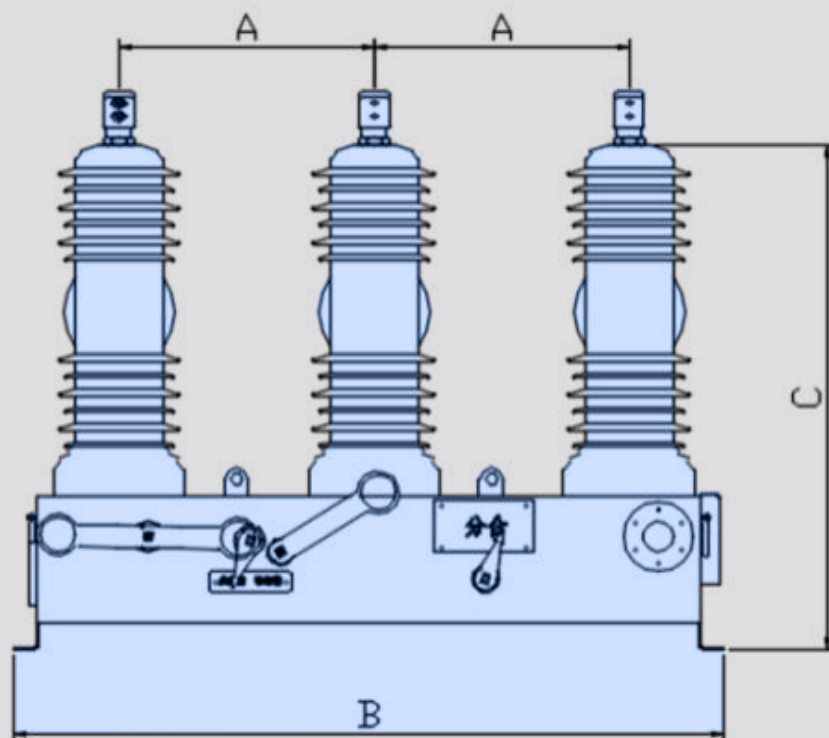
APPEARANCE AND DIMENSION

- | | | | | | |
|---|--------------------|----|---------------------------|----|----------------------------|
| 1 | Incoming terminal | 6 | Insulated pull rod | 11 | Opening spring |
| 2 | Solid sealing pole | 7 | Zero-sequence transformer | 12 | Drive lever |
| 3 | Vacuum tube | 8 | Current transformer | 13 | Spring operation mechanism |
| 4 | Conductive clip | 9 | Lower outgoing line | 14 | Chasiss |
| 5 | Soft connection | 10 | Auxiliary switch | | |



APPEARANCE AND DIMENSION

Dimension (mm)					Packing size (mm)	Weight
	A	B	C	D	L x W x H	Kg
12kV	340	948	660	216	948 x 216 x 660	65
24kV	380	1100	904	246	1100 x 246 x 904	75
36kV	410	1094	945	246	1094 x 246 x 945	85



RECLOSER CONTROL BOX FTU – FEEDER TERMINAL UNIT



The feeder terminal unit(FTU) is a new HV switch control device of control cabinet enclosures equipped with both the imported DSP high-speed sampling chips and the high-performance ARM chips, and can fast and stably finish the monitoring on the switch.

Industrial feeder remote terminal unit by our electric power equipment company has such functions as the protection, measuring, controlling, monitoring, communication, remote control, and so on and features high integration level, flexible configuration, and user-friendly interface. Electrical control cabinet are widely applied to the radiant and ring network power supply systems.

FTU outdoor control electrical control box can help the electrical distribution cabinet systems identify transient and permanent line faults. Outdoor control box eliminate the impact of transient line faults automatically, isolate the permanent fault segments to avoid prolonged power failure in a large area, and automatically recover the power supply in fault-free areas, so as to realize the automation of power distribution network in an economical and practical way.

FTU – KEY FEATURES



- | | | | |
|-----------|---|-----------|--|
| 01 | Integrated multi-functions on new microprocessor based platform - Fault detection & Protection, Metering, Control, Status monitoring, Power quality monitoring. | 07 | Large size memory for load profiling, event and fault recording. Available Disturbance waveforms with COMTRADE format. |
| 02 | Directional protection, Negative sequence protection, SEF and lots of built-in over-current protection curves including IEC, ANSI, Recloser curves. | 08 | Configurable digital inputs. |
| 03 | 4 setting groups and automatic setting group change function. | 09 | Intelligent power supply & battery charger with built-in self-diagnosis & test function. |
| 04 | 4 quadrants energy metering & load profiling. | 10 | IP54 enclosure for mounting on the pole-top |
| 05 | Multi-port, multi-protocol communication support (DNP3.0 Serial, DNP3.0 over TCP/IP, IEC60870-5-101/104), modem control for SCADA | 11 | Customized supports for special user-required functions and firmware upgradable at site. |
| 06 | Built-in protocol monitor for integrating FTU with DAS system. | | |

FTU – KEY FEATURES

Hardware



RTU

- Dual Processor : ARM9 + DSP
- 16-bit A/D converter
- Non-volatile memory : FRAM (1 Mbytes),Flash ROM (1 Mbytes)
- HMI : LCD 20 characters * 8 lines with LED backlight, Buttons, LEDs
- 3XRS232C, 2XETHERNET
- 9 Contact Configurable inputs, 3 digital output、2 high-speed outputs (Electrical isolation)

Controller

- Power supply for FTU and modem
- LBS Motor driving
- Permanent magnet driving
- CAN interface
- Battery charger with test circuit

Control box

- Lead acid battery (12V*2, 7Ah, 12Ah, 35Ah-standard,At least support16h and 10 cycles switch operating)
- Modem ,SMS,GPRS,61850 space
- P65

FTU-FEATURES

Metering

- Galvanic isolation through Aux. CT & Aux. PT
- Secondary of 1000/600/400/200:1, 1000/600/400/200:5 CT ,Up to 200% of rated voltage
- Currents(A,B,C,N), Voltages(A,B,C/R,S,T) : RMS,Phasors, Sequence components, Harmonics
- Power: Apparent(kVA), Active(kW), Reactive(kVar),Power factor
- Energy:4-quadrant metering, import / export active energy, inductive / capacitive reactive energy
- Frequency
- Report value by deadband

Status monitoring

12 Contacts input : Open, Closed,Lock, Gas low, Door open.

- Opto-isolation
- Delay timers for de-bouncing of each contact input
- Configurable : Name, Interlock condition, Inverted status

Controller status

- battery & battery charger test result
- External AC power loss
- Battery low, Battery Fail, Battery overvoltage, Battery Charger Fail, Grounded battery
- Battery voltage

Control Status

- Operator place : Local/Remote
- Control Lock
- Recloser On/Off, Protection On/Off, Ground Protection On/Off Function Status
- Fault indicators, PQM status, Live Line(source, load side), Phase sync., Reclosing status
- Under voltage status, Under frequency status, Self-diagnostics status, etc.
- Analog Hi/Low alarm



FTU-FEATURES

Control

3 contacts output, 2 high-speed outputs:

Open(Trip), Close, Spares. Configurable : Pulse width

Switch Control

- Operator place : Remote, Local (Front Panel/PC Tool)
- Interlocks : Control Lock, Gas low, Mechanical Lock, Current Switch status
- Close interlock conditions (Selective) : Live load, Phase sync.fail

SB0 (Select before Operate):

Secure switch operation / SB0 timeout (settable)

Battery Test, Reset Indicators:

Battery scheduled testing and activation

Protection Functions

- Fault passage indicator
- Over current protection (directional or non-directional)
- Fast and delayed TC trip elements for phase and earth fault
- 8 types of built-in TC Curves (IEC, ANSI, Recloser curves)
- Definite time over-current element
- Negative sequence protection
- Sensitive earth fault detection
- Cold load
- Inrush restraints
- Broken Conductor
- Phase sync. fail detection
- Over voltage/under voltage, under/over frequency
- Reclosing (up to 4 shots)
- Grid Automation
- Fault Count
- 4 setting groups, automatic setting group change depending on power flow



FTU – KEY FEATURES



Event/Fault Recording

- SOEs are stored on non-volatile memory with 1ms time-stamp
- Event history buffers are categorized by group: Fault Events; IO Events; System Events
- Fault waveform recording
64 fault waveforms can be stored on non-volatile memory
80 samples/cycle, 15cycles
Waveforms are stored as COMTRADE file format through PC maintenance software

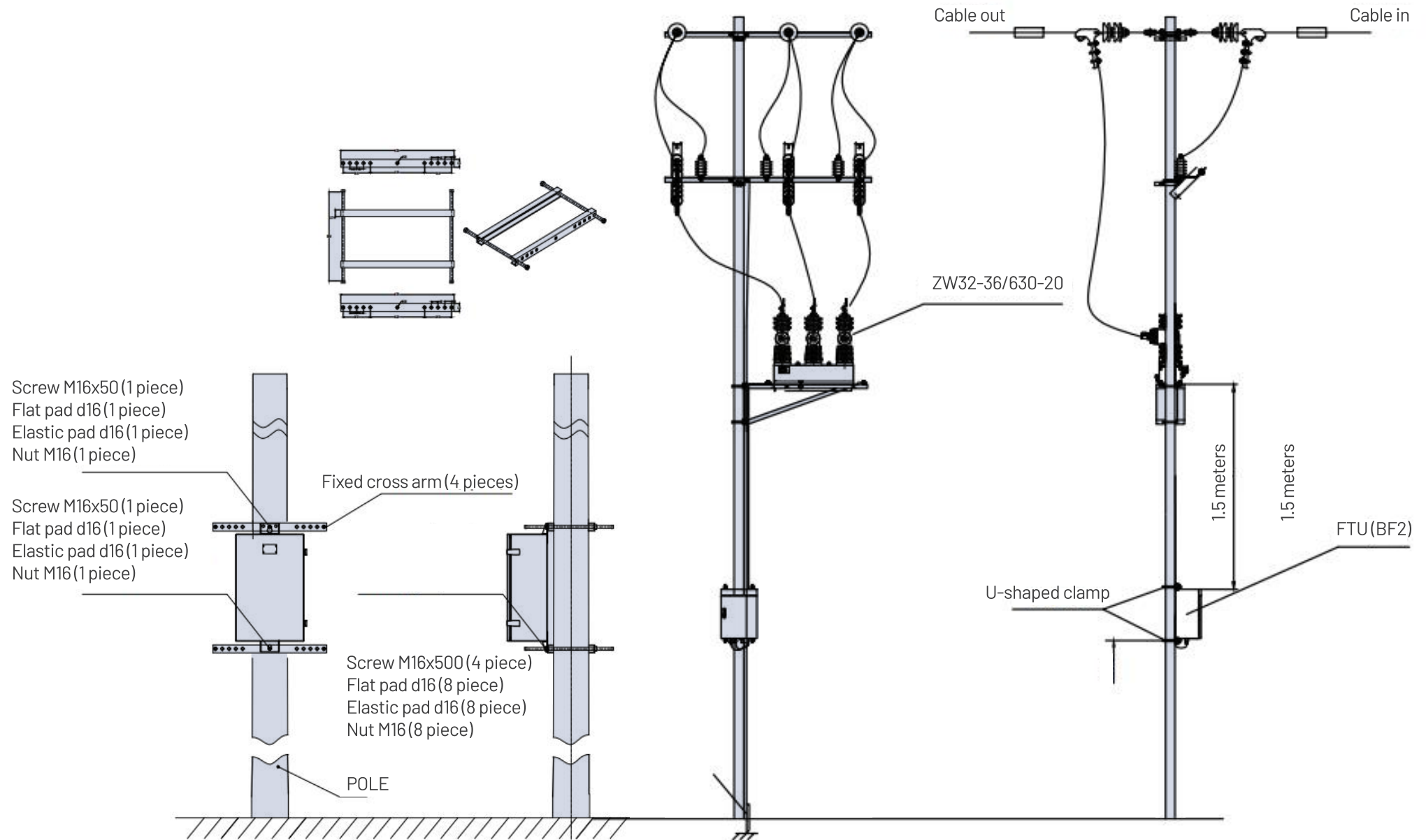
Communicate

- Subset level 2, DNP over TCP/IP
- IEC60870-5-101, 104
- Index mapping
- Modem control
- Unsolicited data send
- Built-in protocol monitor

Auxiliary functions

- Self-diagnosis
- CAN interface with controller
- PC software for setting & maintenance
- Waveform evaluation software
- Firmware upgradable at site

INSTALLATION DRAWING









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