



# Metal Clad Switchgear

---withdrawable  
---KYN28 series



***Product brochure***

***2012/9***

***Zhejiang Farady Powertech Co., Ltd.***

***ISO9001&ISO14001 certificated enterprise***

### ++++*General*

KYN28 indoor metal-clad withdrawable switchgear(hereinafter short as switchgear)is a complete power distribution device for 3.6~24kV,3-phase AC 50Hz,single-bus and single-bus sectionalized system. It is mainly used for power transmission of middle/small generators in power plants; power receiving, transmission for substations in power distribution and power system of factories, mines and enterprises, and starting of large high-voltage motor, etc.,so as to control, protect and monitor the system. The switchgear meets IEC298,GB3906-91.In addition to be used with domestic VS1 vacuum circuit breaker, it can also be used with VD4 from ABB,3AH5 from Siemens domestic ZN65A,and VB2 from GE, etc.,it is truly a power distribution device with good performance.

In order to meet the requirement for wall mounting and front-end maintenance, the switchgear is equipped with a special current transformer, so that the operator can maintain and inspect it in front of the cubicle.

### ++++*Service environment*

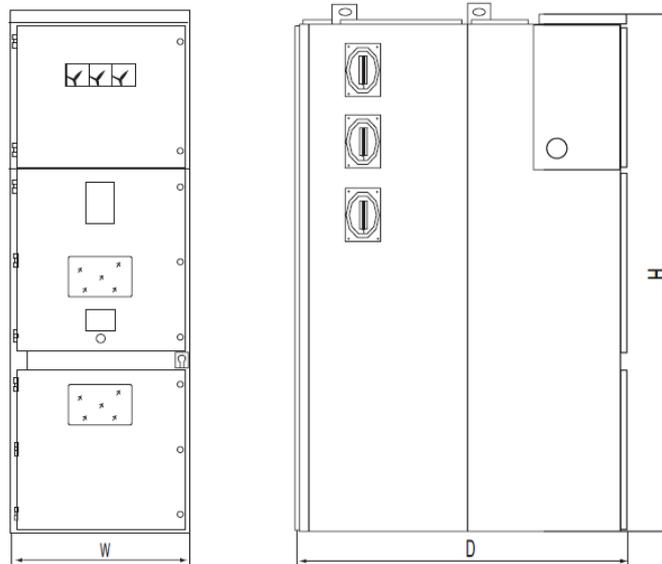
- a) Air temperature: Maximum temperature: +40°C; Minimum temperature:-15°C
- b) Humidity: Monthly average humidity 95%; Daily average humidity 90% .
- c) Altitude above sea level: Maximum installation altitude: 1000M.
- d) Ambient air not apparently polluted by corrosive and flammable gas, vapor etc.
- e) No frequent violent shake

### ++++*Main technical specifications*

No	Item	Unit	Parameter
1	Rated voltage	kV	7.2kV, 12 kV,17.5kV,24kV
2	Rated frequency	Hz	50/60
3	Rated current	A	630,1250,1600,2000,2500,3150,4000
4	Branch busbar Rated current	A	630,1250,1600,2000,2500,3150,4000
5	Main busbar Rated current	A	630,1250,1600,2000,2500,3150,4000
6	1min Power frequency withstand voltage	wet	kV 38 50/60
		dry	kV 48 60/65
7	Lightning impulse withstand voltage	kV	75 95/125
8	Rated short circuit breaking current (peak)	kA	40/50/63/80/100
9	Short time withstand current(4s)	kA	20/25/31.5/40
10	Protection type		IP4X for housing

Note:\*The short circuit capacity should be considered alone.

## ++++Structure & Basic Components of Switchgear



### Overall size and weight

Item	With VS1,VD4 inside	With VS1,VD4 inside	With 3AH5, ZN65A
W×D×H(mm)	650×1400×2200	800(1000)×1500×2200	800(1000)×1700×2200
Weight (kg)	700	800	900

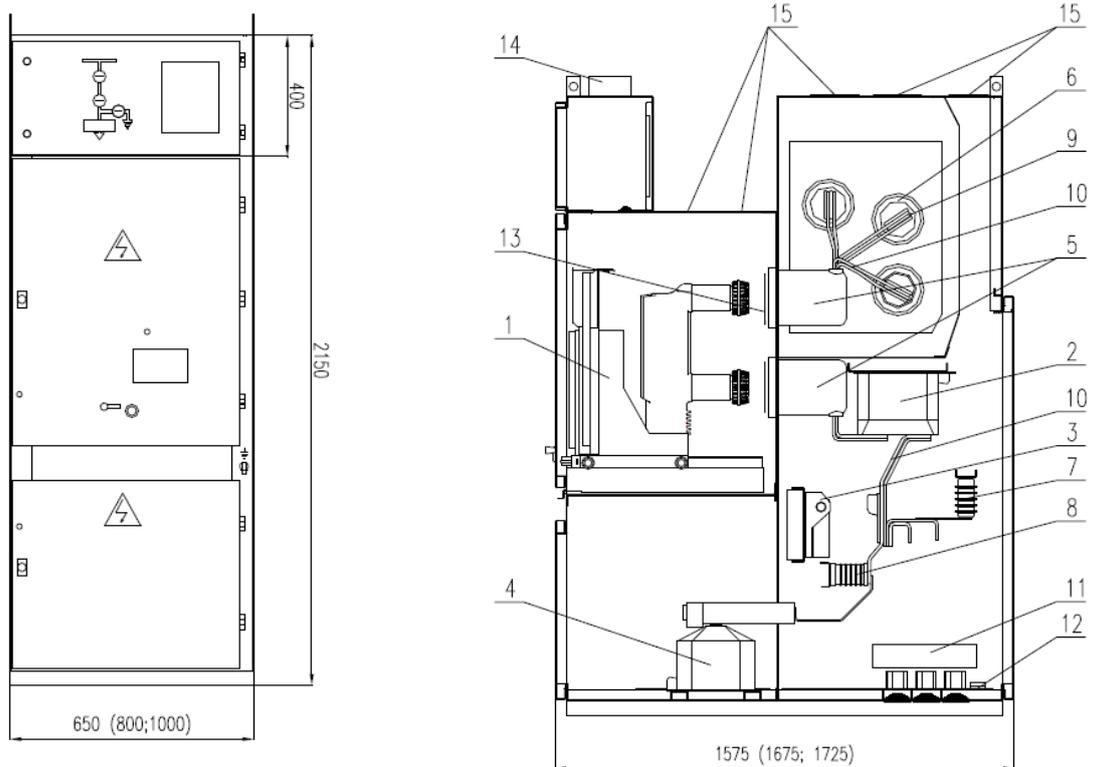
#### Notice:

when the rated current is more than 1600A, cubicle width shall be 1000 mm, and cubicle height will be 1660mm and for schema of rear overhead line in.

- 1)Width of cabinet:650mm(compound insulation)or 800mm(air insulation) at current<1250A;
- 2)Width of cabinet:1000mm at current>1250A;
- 3)Depth of cabinet:1400mm,at cabinet width of 650mm(compound insulation)when employing the configuration of incoming and outgoing cables;
- 4)Depth of cabinet:1500mm,at cabinet width of 800mm(air insulation)when employing the configuration of incoming and outgoing cables;
- 5)Depth of cabinet:1600mm,when employing the configuration of rear overhead incoming and outgoing cables.

A	B	L1	B1	Reference weight Kg
650	1400	380	315	700
800	1500	530	315	800
	1600 overhead			900
1000	1500	730	490	1100
	1600 overhead			1200
900	1700(with 3AH5)	600	415	1000

## ++++*Structure Features*

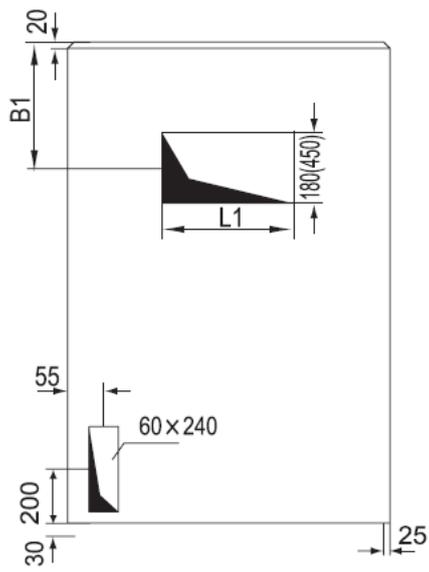


### 1) **compartment**

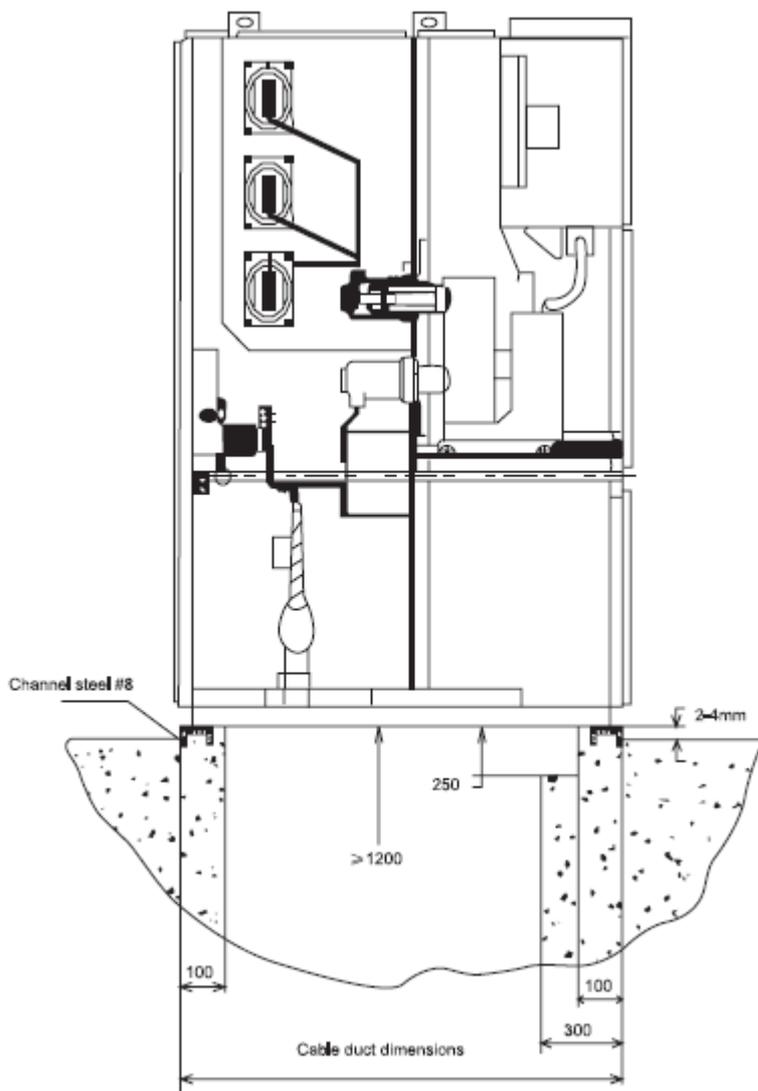
busbar compartment; circuit breaker compartment; cable compartment; low-voltage compartment.

- 1 - main device: circuit breaker, contactor,
- 2 - current transformers,
- 3 - earthing switch,
- 4 - voltage transformers,
- 5 - support-bushing insulators,
- 6 - bushing insulators
- 7 - surge arresters,
- 8 - support insulators (reactance),
- 9 - main busbars.
- 10 - connecting (distribution) busbars,
- 11 - earth-fault current transformer,
- 12 - earthing conductor,
- 13 - metal movable partitions,
- 14 - cable ducts (optionally),
- 15 - vent flaps,

++++Schematics of dimensions of switchgear



Dimension in brackets means dimension of heavy-current cubicle



### ++++*Main components characteristics*

	<p><b>VS1-12 indoor drawably vacuum circuit breaker.</b> <b>Rated voltage 12kV up to 24kV</b> <b>Rated current 630A up to 4000A</b> <b>Rated short circuit breaking current 20kA up to 40kA</b> <b>Mechanical life 10,000 times</b></p>
	<p><b>VD4 embeded pole indoor vacuum circuit breaker.</b> <b>Rated voltage 12kV up to 24kV</b> <b>Rated current 630A up to 4000A</b> <b>Rated short circuit breaking current 20kA up to 40kA</b> <b>Mechanical life 10,000 times</b></p>
	<p><b>VSM magnetic actuator indoor VCB</b> <b>Rated voltage 12kV up to 24kV</b> <b>Rated current 630A up to 4000A</b> <b>Rated short circuit breaking current 20kA up to 40kA</b> <b>Mechanical life 100,000 times</b></p>

### ++++*Photos of frontal view*



## ++++***Transportation, Maintenance and Order***

### **Transportation and Storage**

The switch cabinet can be transported by fork truck if guaranteed to be fixed on the bottom plate, and by handling or removing the entire entity if not fixed on bottom plate, but any case it should be transported vertically, no allowance for inversion in order not to damage the internal components.

The switch cabinet(even for that with outer package) should not be exposed outside for storage for a long time. The switch cabinet that needs the long-term storage should be put in the dry and ventilate indoor warehouse. The period of validity of outer package of switch cabinet is normally no more than 1 year.

### **Maintenance**

Free of maintenance for 3 years under the normal conditions.

There is no need of maintenance and any lubrication for the single-spring and dual-spring operation mechanism of load switch.

The relay protection device should be checked by the requirement of the manufacturer before put into the running.

The maintenance periodicity for ring main unit is normally one time every year.

Maintenance by the below requirement:

Fasten all the electrical connectors(main bus bar, switch, cable, measuring meter)required by Installation and Operation Instruction.

Clean all the parts by dust collector(main switch, auxiliary switch, tripping mechanism, motor etc.) and check the appearance.

Have a switching on/off operation for all switches including earth switch.

Turn on auxiliary control electric source not giving the remote control signal to have a electrical order operation.

Clean the busbar cubicle and cable cubicle.

### **Order**

#### **Complete-set Product:**

The below documents are attached with the switch panel when out of factory;

Qualification Certificate of Product;

Installation and Operation Instruction;

Packing List;

Engineering Design Document of Product;

#### **Accessory of switch panel :**

one operating handle of load switch attached with each complete set;

#### **The customer should offer the following information for order:**

Wiring diagram of Main circuit Loop and Special Technical Requirement;

Installation Arrangement Plan of switch panel;

Specification of component inside switch panel and the schematic diagram of auxiliary loop and control loop diagram.

Other written documents specially required..

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