

KYH1-40.5 Model Removable AC Metal-clad Switchgear

Summary

KYH1-40.5 model Metalclad Centered Metal-enclosed Switchgear (hereinafter referred to as switchgear) is a new product independently designed and developed by HEAG group after absorbing international advanced technology. The product has the outstanding advantages.

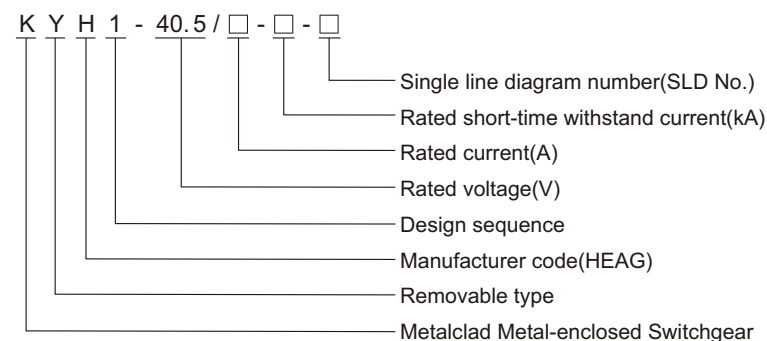
The switchgear applies to three phase power system of rated voltage 24~40.5kV AC 50Hz(or 60Hz) for receiving and distributing power energy, and also for circuit control, monitor and protection. It can be used in single-busbar system and single-busbar section system.



Ambient condition

1. Environmental ambient temperature: +40°C~-15°C, daily average not exceed 35°C;
2. Altitude above sea level: not exceed 1000m;
3. Relative humidity: daily average less than 95%, monthly average less than 90%;
4. Saturated vapor pressure: daily average less than 2.2×10^{-3} MPa, monthly average less than 1.8×10^{-3} MPa ;
5. Earthquake intensity: not exceed 8 grade;
6. The environmental air without flammable, explosive and corrosive material;
7. Site without frequent vibration.

Model



Product feature

1. The enclosure is completely formed by Al-Zn coated steel plate after multiple bending processed by CNC machine, then is assembled with the bolts, which has strong mechanical strength and effectively ensure the neatness and good appearance. The door is painted by the plastic powder and has strong anti-impact and corrosion proof ability. The protection grade of enclosure is IP4X.
2. The main circuit breaker is VHY1-40.5 model Solid-sealed Vacuum Circuit Breaker, which is independently designed and developed by HEAG group. It has the unique advantages of long life, high reliability, less maintenance and small volume, furthermore, it has perfect and reliable anti-misoperation function. Of course, the switchgear can be equipped with other similar circuit breakers.
3. The circuit breaker handcart is centred structure, which inherits the advantage of KYN28 model switchgear. This structure avoids the adverse effects for the installation foundation against the movable / fixed contacts, and is convenient for maintenance and overhaul.

Technical specification

1. Main technical parameters of switchgear

table 1

Item		Unit	Data
Rated voltage		kV	40.5
Rated insulation level	1 min P.F. withstand voltage	kV	Interphase, phase to ground 95; between gaps 118
	Lightning impulse withstand voltage	kV	Interphase, phase to ground 185; between gaps 215
Rated frequency		Hz	50 (or 60)
Rated current		A	630, 1250, 1600, 2000, 2500
Rated short-time withstand current(4s)		kA	25, 31.5
Rated peak withstand current※		kA	63, 80
IAC grade			BFLR
Kind of operation continuity			LSC2B-PM
Protection grade			IP4X(enclosure), IP2X(compartment)
Outline dimension (W×D×H)		mm	1200×2600×2400※※
Weight		kg	< 1600

※: The short-circuit capacity of CT shall be separately considered;

※※: If installed with Lightning Arrester or the aerial busbar outgoing/incoming, the cubicle depth shall be 2800mm.

2. Main technical parameters of VHY1-40.5 model indoor vacuum circuit breaker

table 2

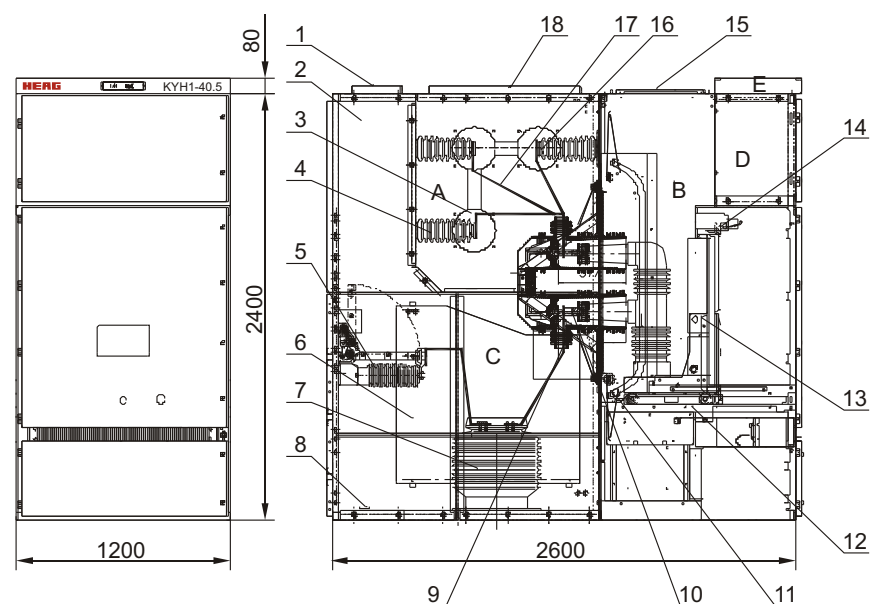
Item		Unit	Data
Rated voltage		kV	40.5
Rated insulation level	1 min P.F. withstand voltage	kV	Interphase and phase to ground 95
	Lightning impulse withstand voltage	kV	Interphase and phase to ground 185
Rated frequency		Hz	50 (or 60)
Rated current		A	630, 1250, 1600, 2000, 2500
Rated symmetrical short-circuit breaking current		kA	25, 31.5
Rated peak withstand current		kA	63, 80
Rated short-time withstand current(4s)		kA	25, 31.5
Rated operating sequence			O-0.3s-CO-180s-CO
Opening time		ms	20~50
Mechanical life		time	20000
Electrical life		grade	E2
Rated out of phase earth fault breaking current		kA	27.3
Rated cable charging breaking current		A	50
Rated voltage/current of opening operation		V/A	DC(AC)220/1.5, DC(AC)110/3
Rated voltage/current of closing operation			DC(AC)220 /1.5, DC(AC)110/3
Rated instantaneous over-current tripping current		A	5
Rated voltage of secondary circuit		V	DC(AC)220, DC(AC)110
Rated voltage of motor for energy storage			DC(AC)220, DC(AC)110
Rated output power of motor for energy storage		W	70
Time of energy storage		s	≤12

3. Main technical parameters of JN15-40.5 model earth switch

table 3

Item	Unit	Data
Rated voltage	kV	40.5
Rated P.F. withstand voltage(1 min)		95
Rated lightning impulse withstand voltage(peak value)		185
Interphase centre distance	mm	280
Rated short-time withstand current(4s)	kA	31.5
Rated short-circuit making current		80
Rated peak withstand current		80

Structure schematic drawing



A. Busbar compartment B. CB compartment C. Cable compartment
 D. Instrument compartment E. Small busbar compartment

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|--------------------------------|------------------------|--|
| 1. Pressure releasing plate | 7. Current transformer | 13. Circuit breaker |
| 2. Cubicle body | 8. Earth bar | 14. Secondary plug |
| 3. Busbar bushing | 9. Contact box | 15. Pressure releasing plate of CB compartment |
| 4. Insulator | 10. Fixed contact arm | 16. Main busbar |
| 5. Earth switch | 11. Shutter mechanism | 17. Branch busbar |
| 6. Interphase insulation plate | 12. Guide rail | 18. Pressure releasing plate of busbar compartment |

KYH1-24 Removable AC Metal-clad Switchgear

Summary

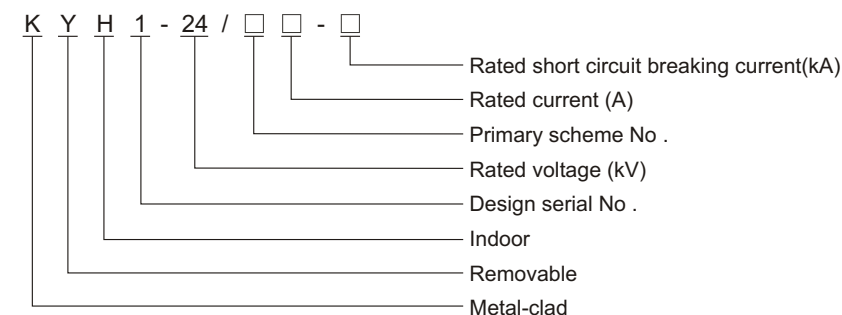
KYH1-24 removable AC metal-clad switchgear(short for panel as below) is a new product, designed and developed by HEAG Group, based on the introduction of advanced foreign design and manufacturing technology. The panel applies to 13.8~24kV, 3phase AC 50Hz or 60Hz network for receiving and distributing power energy and also for control, monitor and protection. It can be arranged for single busbar, single busbar sectionalizing system. It accords to IEC62271-200 AC Metal Enclosed Switch and Control Equipment above 1kV and below 52kV IEC60694 Standard Common Clauses for HV Switchgear, GB3906 3~35kV AC Metal Enclosed Switchgear, DL404 Order Specification for Indoor AC HV Switchgear, DIN. VDE0670 AC Switchgear at Rated Voltage Over 1kV and so on. It has perfect and reliable prevention function against false operation.



Ambient condition

1. Ambient temperature: -10°C~40°C; daily average ≤ 35°C;
2. Altitude: ≤1000m;
3. Relative humidity: daily average: ≤95%, monthly average: ≤90%;
4. Earthquake intensity: ≤8 degree;
5. Applicable occasions should be free from inflammables, explosives, corrosives and severe vibration.

Model



Structure feature

The enclosure is complete made of aluminium-zinc plated steel sheet by CNC machine and multi-bending, high precise dimension, short production cycle, good mechanical strength and nice appearance. The handcart frame can sort into CB handcart, PT handcart, measuring handcart and so on. The handcart has isolating/testing position and working position in cubicle, each position is equipped with a locating device to ensure that the handcart will not move at random when in specified position. A special guide rail is installed in CB compartment for the handcart to move between isolating/testing position and working position. The movable curtain plate made of insulating sheet is installed on the back wall of handcart compartment. The busbar is led from one cubicle into another cubicle under the supporting of insulation bushing, and connects with the fixed contact box through the branch bus. The main busbar and inter busbar are round copper bars with rectangular section. Current transformer and the earthing switch can be mounted on the back wall of cable compartment. Potential transformer and the lightning arrester can be mounted inside it. The meter compartment includes relay components, meters electrified indicator and specified secondary equipments. The control circuits are laid in the neck grave with sufficient space and metal cover plate.