SWITCHGEAR

High Voltage Disconnectors

145 kV to 550 kV

The outdoor AC disconnectors are designed to establish a visible, no load isolation point in transmission networks, enabling safe maintenance and switching on busbars and lines. Models cover 145, 170, 252, 362, 420 and 550 kV systems with options for integrated earthing switches and configurations suited to line, bus, bypass and special layouts.

Proven Insulation Performance

Creepage distances sized for pollution Class IV with power frequency and lightning impulse withstands up to PF 740 kV / LI 1675 kV at 550 kV, ensuring reliable external insulation in harsh environments.

Maintenance Free Rotating Assemblies

Sealed bearing housings and closed rotating bases prevent ingress of moisture, dust and corrosives, keeping operating torque stable over time.

High Integrity Contacts

Self cleaning or self clamping copper alloy fingers with silvered surfaces minimize contact resistance and heating; force balanced designs resist vibration and wind induced movement.

Flexible Site Fit & Layouts

Portfolio spans horizontal center, vertical "scissor", single arm telescopic, and 3 post rollover type mechanisms; options include left/right/both side earthing, manual or motor operation, and bus transfer current capability where required.

Functionality & Options

- **Visible isolation** under no load conditions for line, transformer and busbar bays.
- **Opening/closing of small inductive/capacitive currents** (typ. 0.5–2 A) where specified.
- **Bus transfer current switching** for double/bypass bus schemes (per model ratings).
- **Integrated earthing** (equipment side and/or line side) including three position isolator/earthing arrangements on selected series.
- **Withstand of short time currents** via associated earthing switches, per series ratings and standards.
- **Operating mechanisms:** Motorized (CJ/SRCJ) for tri-pole or single-pole; manual (CS14G/CS11/SRCS) with interlocks.
- **Earthing switches:** Left, right, or double-side; some series include built-in line- and equipment-side earthing.
- **Arrangements**: Parallel or crossover; soft or tubular bus types with set diameters; pole-specific mounting kits and steel supports.
- **Auxiliaries:** Auxiliary contacts, electromagnetic locks, interphase cables, heaters, and PLC/RTU I/O via mechanism auxiliaries.

Sieyuan insulect
VERSATILITY VIA COLLABORATION

Key Components

- **Conductive arms & contacts.** High-conductivity aluminum or copper alloy arms; self-clamping / self-cleaning contact fingers (silver-plated) for low resistance, low wear.
- **Post insulators & bushings.** High-strength porcelain or composite, dimensioned for Class IV pollution and high creepage.
- **Rotating bases & sealed bearings.** Fully enclosed housings with multi-stage seals; dust and moisture-proof to maintain smooth operation.
- **Operating mechanism.** Motor or manual actuators providing 90°/135°/180° output angles depending on series; adjustable linkages for synchronized three-pole operation.
- **Earthing switch (optional).** Single-arm or multi-arm plug-in types with plum-shaped or U-finger contacts, rated for induced-current making and short-time withstand as specified.

Representative Series (145–550 kV)

- **GW4C (up to 252 kV):** double-post, horizontal center-break; bus transfer and small-current capability; W3 pollution options.
- **GW4-362/420/550 D(W):** EHV variants with PF/LI/SI withstands up to 620/1550/1175 kV (420 kV class) and 740–870/1800/1300 kV (550 kV class), plus defined bus-transfer and induced-current ratings.
- **GW6B (126–550 kV):** single-post, vertical scissor (double-arm) for compact bus bays beneath conductors; excellent for soft or rigid busbars.
- **GW7B (72.5–550/800 kV):** three-post flip-type with two series open breaks; strong self-cleaning contact action and high-class insulation. (Use 145–550 kV for this brochure scope.)
- **GW22B (126–550 kV):** single-post, single-arm telescopic (forceps-type contact); compact footprint, direct bus mounting; robust sealing and anti-corrosion design.
- **GW23B (126–550 kV):** double-post horizontal telescopic, plug-type contacts; suitable for line bays and one-and-a-half breaker schemes.

Technical Specifications

Standards & frequency: 50/60 Hz; insulation levels aligned to DL/T593 & GB/IEC/IEEE references shown in the data; pollution Class IV capable where

Voltage class	Rated current (typ.)	Short-time withstand (typ.)	Peak withstand (typ.)	PF withstand (1 min) – to earth / across break	LI withstand (peak) – to earth / across break	Bus transfer (typ.)	Notes
145 kV	1250–3150 A	40–50 kA (3–4 s)	100–125 kA	275–315 kV / 315–315+	650–750 kV / 550–750+	Available on selected models	Horizontal center-break or V-type; left/right/double earthing.
252 kV	1600–4000 A	50–63 kA (3 s)	125–160 kA	460 kV / 460+145 kV	1050 kV / 1050+200 kV	350–435 V, up to 2400 A, 100 ops (per model)	Horizontal break / telescopic / scissor variants.
362 kV	3150–5000 A	up to 63 kA (3 s)	up to 160 kA	510–520 kV / 610–900 kV	1425–1675 kV / >1425 kV	e.g., 435 V, 3000 A, 100 ops (per model)	Enhanced induced-current switching on earthing device.
420 kV	4000–5000 A	50–63 kA (2–3 s)	130–164 kA	620 kV / 800–900 kV	1550–1760 kV / 900–1175 kV SI	As specified	EHV insulation per table; RIV and creepage per Class IV.
550 kV	3150–5000 A	63 kA (2–3 s)	160 kA	740–870 kV / 1175–1300 kV SI	1675–1800 kV / +450–650 kV across break	As specified	Long creepage (up to 20,000 mm class); high mechanical loads.

* Exact values vary by series and configuration (e.g., across-break values shown as "+..." for incremental requirements). Please select final ratings from the target series data sheets.

Environmental & Mechanical

- **Ambient temperature:** typically –50°C to +55°C (series dependent).
- **Altitude:** standard designs up to 2000–3000 m, with altitude correction for external insulation.
- **Wind / ice / seismic:** wind up to 34 m/s, ice up to 20 mm, seismic up to AG5 / 9 degree (per series tables).
- **RIV:** ≤ 500 µV (typ.), per series.

Selection & Ordering Guidance

- **Voltage class & insulation level** (PF/LI/SI, creepage requirement/pollution class).
- **Rated current** and **short-time/peak withstand** requirements.
- **Arrangement/layout:** single bus, double bus with bypass, line bay, bus-transfer duty needed or not.
- **Earthing switch configuration:** side(s), induced-current duty (electromagnetic and electrostatic values), and making/breaking cycles required.
- **Operating mechanism:** motor/manual, control voltages, auxiliary contacts and interlock logic; steel support supply; interphase cable lengths.

Insulect Australia

p: 1300 446 565
e: sales@insulect.com
w: insulect.com

Certified System
Quality
ISO 9001

DISCLAIMER: The information in this document is believed to be correct at the time of publication. The user is responsible for determining whether the product is fit for a particular purpose and suitable for user's method of use or application. No reliance may be placed on any such information or data without first contacting Insulect Australia to clarify individual user requirements.

Sieyuan insulect
VERSATILITY VIA COLLABORATION