JST POWER EQUIPMENT

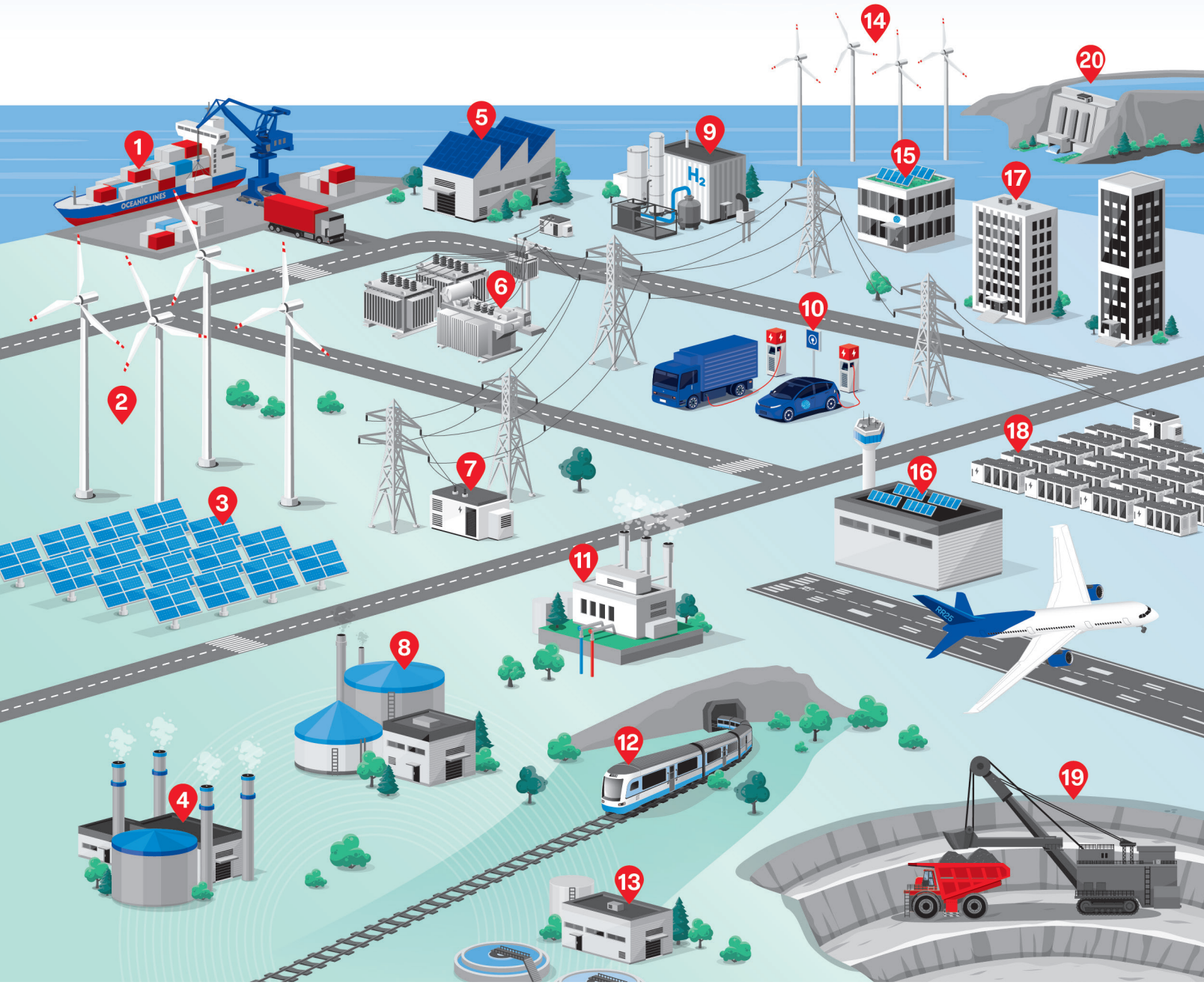
OD3Mag™ Medium Voltage Breaker

The first medium voltage substation breaker with configurable single-phase or three-phase operation

JST Power Equipment is a technology innovation company. With the OD3Mag breaker, JST Power combines field-proven magnetic actuation with independent pole operation to achieve the first-ever medium voltage, single-phase capable distribution circuit breaker. Manufactured in the USA, the OD3Mag breaker is thoughtfully designed to help utilities improve their SAIDI and SAIFI scores and reduce operations and maintenance costs. This next generation circuit breaker is made for the modern grid.

30+

Years of Production and Operating Excellence



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Standard Features

- Up to 15 kV, 1250/2000 A, 31.5 kAIC
- Magnetically actuated breaker
- Single-phase interruption capability with independent pole actuators
- Overhead lift and forklift provisions for flexible on-site handling
- Extra creep bushings
- Lift-out breaker for easier upgrades/repairs
- Low voltage control instrument panel swing door
- Adjustable leg heights
- Lift-off cabinet doors
- Position indicators for each phase
- Manual trip lever and mechanical lockout (69 switch)
- 5-year warranty
- The magnetic actuator's control module and capacitor are housed in a streamlined and easily removed enclosure for fast and simple replacement in the unlikely event of premature capacitor failure

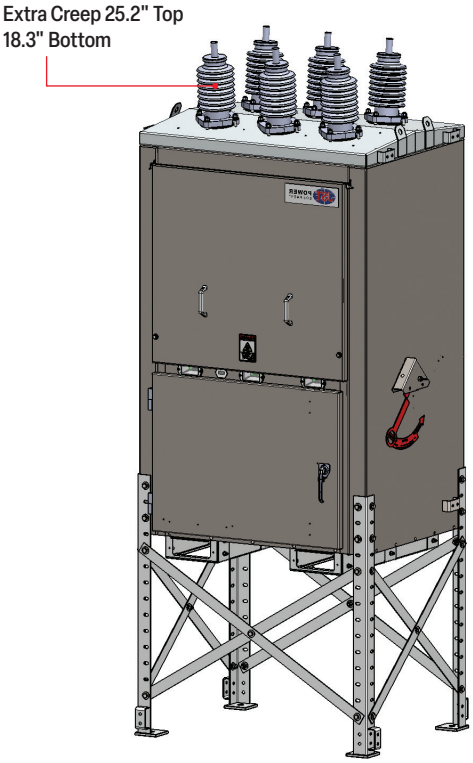
The roof design distributes the weight of the current transformers (CTs) and bushings across the roof span and is reinforced by the side sheets of the enclosure. This prevents structural failure of the roof during transport, and combined with the dynamic gasket system of the bushings, prevents leaks from occurring in the field.

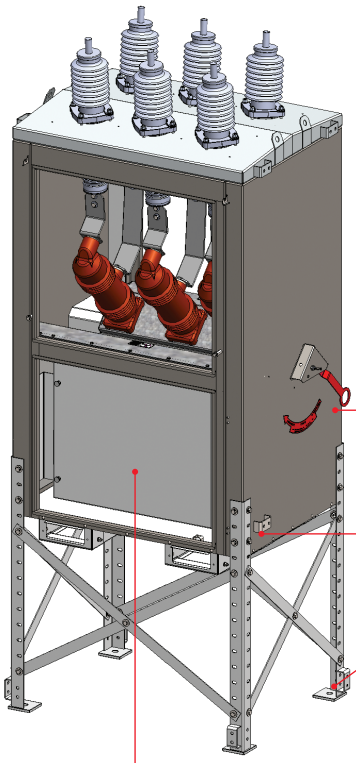
Outdoor Substation Breaker

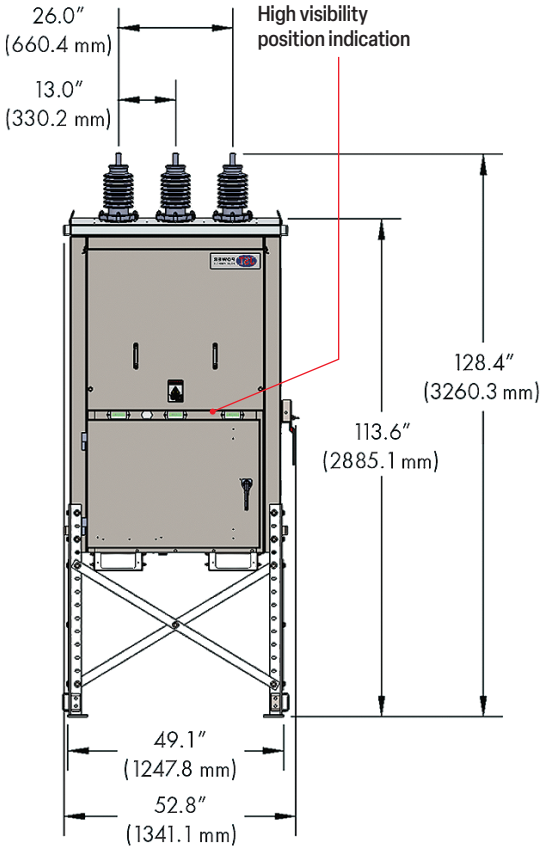
The OD3Mag breaker is the first medium voltage substation breaker with configurable single-phase or three-phase operation. This feature blends the ratings and durability of a circuit breaker with the functionality of a recloser. By tripping individual phases on a distribution system, utilities are able to improve SAIDI and SAIFI scores, reduce restoration times and enhance overall system performance. Combined with a robust enclosure that prevents moisture and contamination ingress, the OD3Mag breaker uses field-proven magnetic actuation to significantly reduce O&M costs.

Optional Features

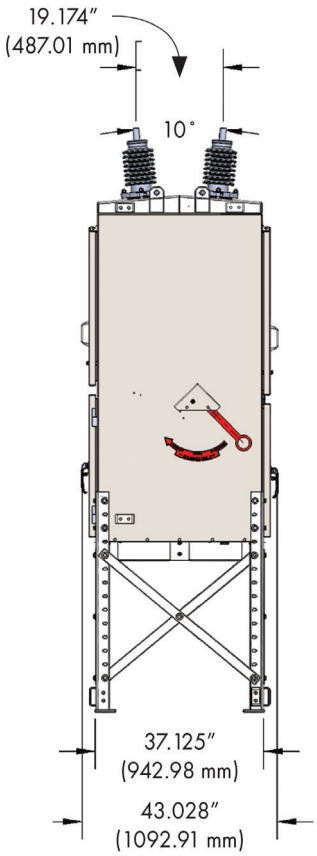
- OD3Mag breakers with Vizimax control deliver precise point-on-wave switching to minimize inrush currents, prevent re-ignition at opening and protect motors, transformers and capacitor banks from harmful switching transients
- Single-phase or three-phase OPEN/CLOSE configurations
- Aluminum (light weight) or mild steel high voltage cabinet doors
- CT and Rogowski coil options:
  - Up to two sets of C200 per bushing
  - One set of C400 accuracy per bushing
  - Single and multi-ratio CTs available



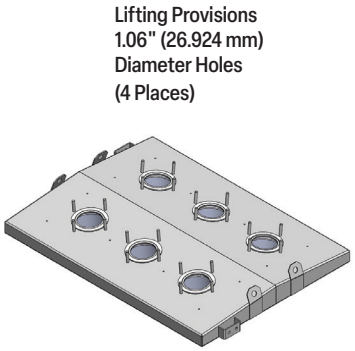


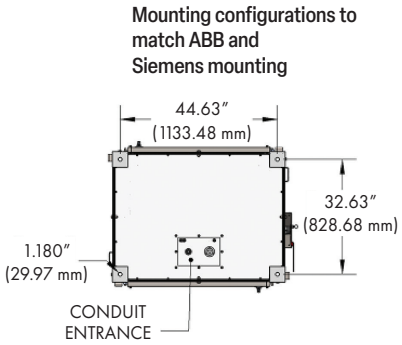


Front View



Side View





Bottom View

OD3Mag Design Advantages

- Emphasis on a robust cabinet design to prevent moisture and contamination ingress across breaker lifetime
- Interior structural bolts minimize the number of enclosure penetrations and prevent leaks
- Welded roof design transfers the weight of bushings and CTs to the cabinet side panels, thereby eliminating roof deflection and reducing water leakage issues
- High voltage doors are secured using welded hangers on the top edge and stand-off hex bolts on the bottom edge, and include door handles for easy lifting; this preserves the gasket system, provides an automatic grounding point for the cabinet doors, and improves the handling of the doors by field service technicians
- Control cabinet doors use a proprietary three-point latching system to reduce door bowing and leaking
- Operation counter visible without opening the control cabinet door

Manual Trip Lever

Overhead Bushing

Advantages of Magnetic Actuation

- Fewer moving parts reduces failure modes and maintenance issues; use of Rulon bearings removes the need for lubrication
- Direct drive ensures consistent operation throughout the mechanical life of the breaker; additionally, direct drive improves mechanical performance over the entire temperature range (linkages used in traditional main shaft breakers wear out over time and dramatically change the travel behavior through-out the mechanical life)
- Electronic inputs and capacitor energy storage result in consistent operating speed across entire temperature rating, voltage rating and mechanical life of the breaker
- Lower O&M costs / no preventive maintenance on actuators
- Low power requirements from station service batteries or transformer
- Quiet / low noise during operation

All ratings stated below have been verified through IEEE C37.04/09-2018 or relevant specification testing.

Ratings/Characteristics of the Object Tested	
Maximum voltage	15.5 kV RMS
Continuous current	1250/2000 A
Number of poles	3
Voltage range K factor	1
Power frequency	60 Hz
Power frequency withstand voltage (dry/wet)	50 kV / 45 kV
Basic insulation level (BIL)	125 kV
Standard operating duty	O-0.3s-CO-15s-CO
Short-circuit current	31.5 kA RMS
Peak withstand current	82 kA
Duration of short circuit	2 s
Short-circuit making current	82 kA RMS
Symmetrical interrupting capability	31.5 kA RMS
Asymmetrical interrupting capability	43 kA RMS
Interrupting time	3 or 5 cycle
Transient recovery voltage	34.2 V
Control voltage	48 Vdc, 125 Vdc, 120 Vac
Class	S2

Capacitive Switching	
Maximum voltage	15.5 kV RMS
Number of poles	3
Rated overhead line current	100 A
Rated capacitor bank current (back-to-back)	630 A
Rated peak inrush	6 kA
Rated inrush frequency	1.2 kHz
Class	C2

Mechanical/Environmental	
Operations	10,000 ops
Maintenance period	10,000 ops
Rated minimum operational temperature	-40° F (-40° C)
Rated maximum operational temperature	131° F (50° C)
Rated IP	IP55, IK10

JST Power Equipment Around the World

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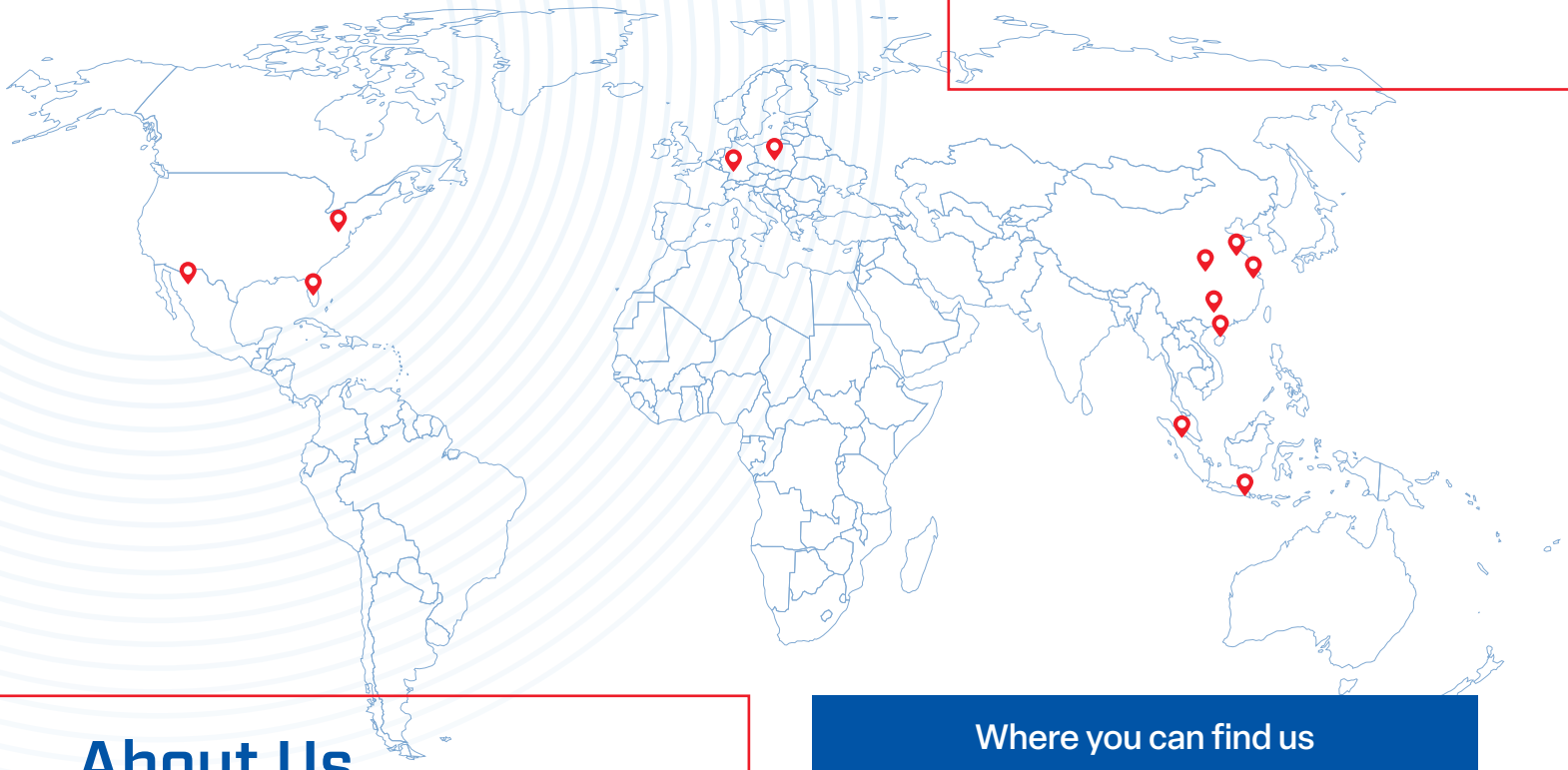

About Us

At JST Power Equipment, we pride ourselves on delivering world-class transformer and electrical equipment solutions. The key to our success is the ability to provide quality products with speed and precision through the dedication of our talented team.

For over 30 years, we've evolved to become an innovator in the electrical industry and we work hard to design and build our products to the highest quality standards. And as we look toward the future, we're continuously investing in our technology, facilities and people to engineer the best solutions in the industry and create more value for our customers.

At JST we're more than a manufacturer, we're transforming the future of power.

Where you can find us

North America

- Orlando FL USA
- Wytheville VA USA
- Nogales, Mexico

Europe

- Frankfurt, Germany
- Lubliniec, Poland

Asia

- Guilin, China
- Haikou, China
- Shanghai, China
- Wuhan, China
- Yangzhou, China
- Surabaya, Indonesia
- Klang, Malaysia

JST POWER EQUIPMENT

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