JST POWER EQUIPMENT

OD3Mag™ - Medium Voltage Breaker

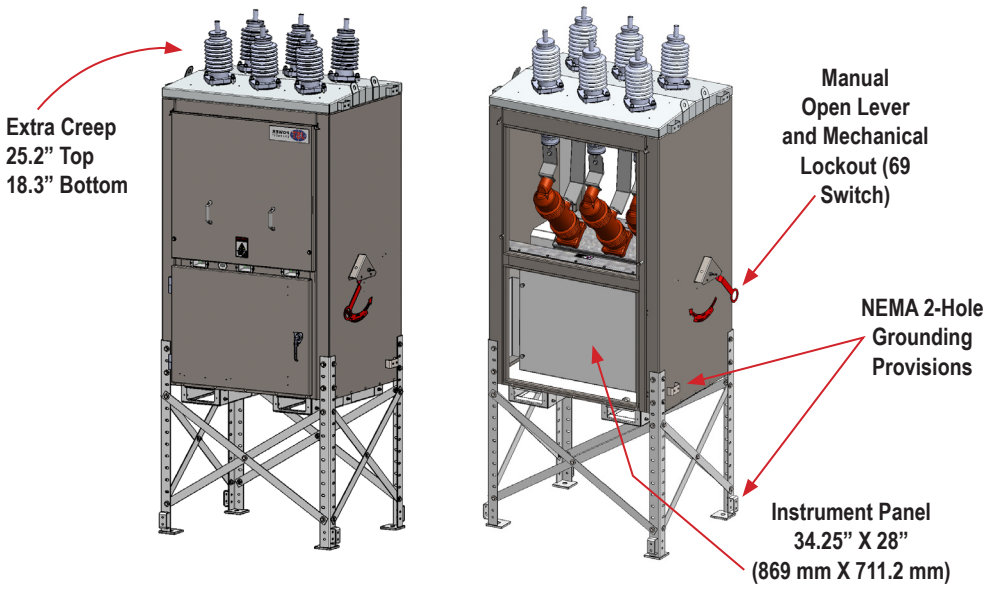
JST Power Equipment, Inc. is a technology innovation company. With the OD3Mag™ breaker, JST combines field-proven magnetic actuation with independent pole operation to achieve the first-ever medium voltage, single-phase capable distribution circuit breaker. Manufactured in the USA, the OD3Mag™ breaker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

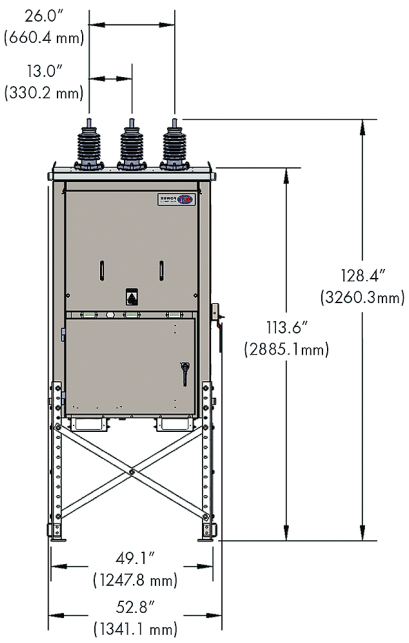
JST POWER EQUIPMENT

Outdoor Substation Breaker

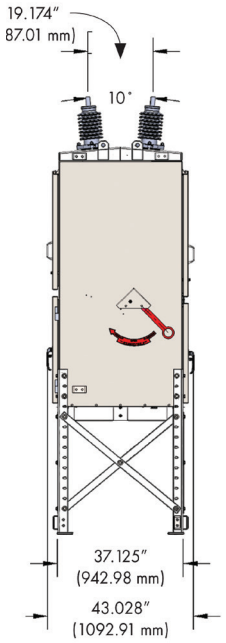
The OD3MAG™ breaker is the first medium voltage substation breaker with configurable one-phase or three-phase operation. This feature blends the ratings and durability of a circuit breaker with the functionality of a recloser. By tripping individual phases on a distribution system, utilities are able 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 spend.

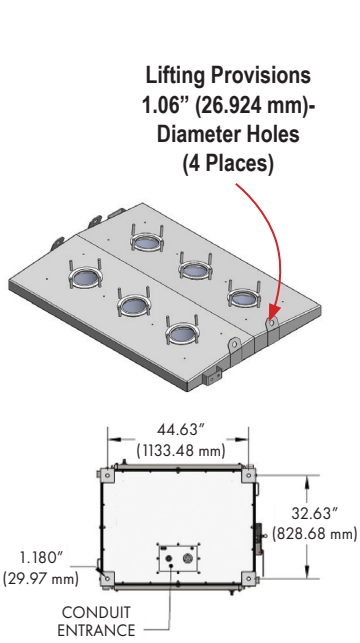




Front View



Side View



Bottom View

STANDARD FEATURES

- Up to 15 kV, 1250/2000 A, 31.5 kAIC
- Magnetically actuated breaker
- Single-phase capability with independent pole actuators
- Overhead lift and forklift provisions for flexible on-site handling
- Extra creep bushings
- Lift-out breaker for easier upgrad es/repairs
- LV 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 design of the roof distributes the weight of the CT's 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.

OPTIONAL FEATURES

- Single-phase or three-phase OPEN/CLOSE configurations
- Low voltage cabinet door may open to the left or to the right
- Instrument door for relay controls is available on either side of the breaker
- Aluminum (light weight) or mild steel high voltage cabinet doors
- CT and Ragowski Coil options
  - Up to 2 sets of C200 per Bushing
  - One set of C400 accuracy per Bushing
  - Single and multi-ratio CTs available

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Outdoor Substation Breaker

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 CT's to the cabinet side panels, thereby eliminating roof deflection and reducing water leakage issues
- HV 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

- Few moving parts eliminates lubrication requirements
- Direct drive push rods eliminates structural torquing of the breaker and results in longer life of vacuum interrupters
- Magnetic losses are negligible resulting in consistent operating speed across entire temperature rating of the breaker and entire life of the breaker
- Lower O&M costs / no preventative 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 factor K	1
Power frequency	60 Hz
Power frequency withstand voltage (dry/wet)	50 kV / 45 kV
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	31.5 kA RMS
Symmetrical interrupting capability	31.5 kA RMS
Asymmetrical interrupting capability	43 kA RMS
Interrupting time	3 cycle
Transient recovery voltage	34.2 V
Control voltage	48VDC, 125VDC, 120VAC
Class	S2

CAPACITIVE SWITCHING

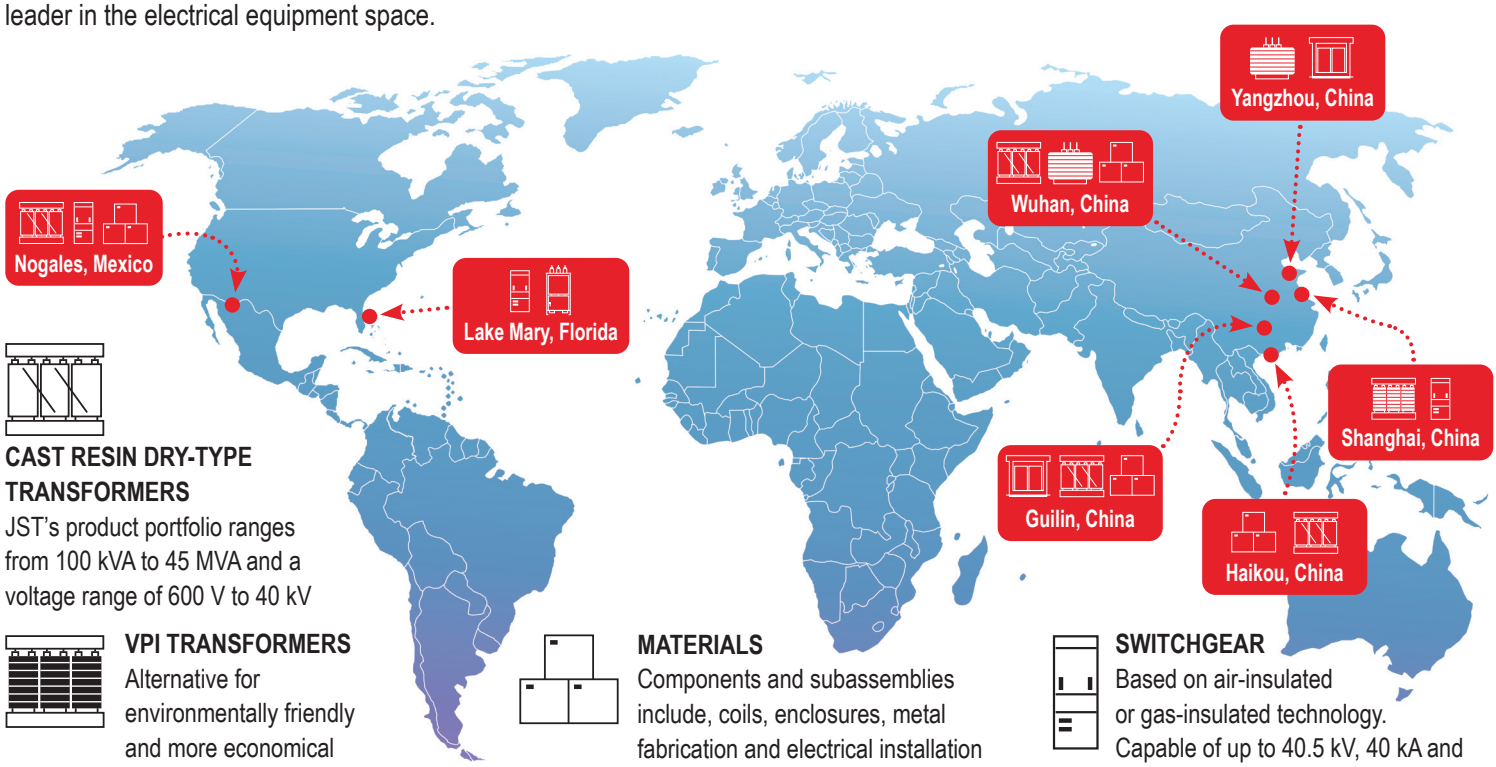
Maximum voltage	15.5 kV RMS
Number of poles	3
Rated overhead line current	100 A
Rated capacitor bank current (back-to-back)	630 A
Rated peak inrush	6 kA
Rated inrush frequency	1.2 kHz
Class	C2

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

An Expanding Global Footprint with a Dynamic North American Presence

JST started in Haikou, China, in 1993, as a developer and manufacturer of high-tech, environmentally friendly power transmission and distribution equipment. Primarily a cast-resin transformer producer, the company's steady growth has resulted in JST evolving into a market leader in the electrical equipment space.



CAST RESIN DRY-TYPE TRANSFORMERS
JST's product portfolio ranges from 100 kVA to 45 MVA and a voltage range of 600 V to 40 kV

VPI TRANSFORMERS
Alternative for environmentally friendly and more economical requirements. Rated up to 14.5 MVA and 40 kV

OIL FILLED TRANSFORMERS
Pad-mounted. Up to 5 MVA, 40.5 kV. Small power transformer units up to 60 MVA and 150 kV

MATERIALS
Components and subassemblies include, coils, enclosures, metal fabrication and electrical installation

PACKAGED SOLUTIONS
Includes LV and MV switchgear, transformers, inverters and auxillary equipment such as lighting, HVAC and monitoring

SWITCHGEAR
Based on air-insulated or gas-insulated technology. Capable of up to 40.5 kV, 40 kA and a continuous current of 3,000 A

OUTDOOR BREAKER
Magnetically actuated breaker with 1ph and 3ph operating modes. Rated up to 15 kV, 2000 A, 31.5 kA

MANUFACTURING FACILITIES

Lake Mary, Florida

Nogales, Mexico


Haikou, Hainan


Wuhan, Hubei


Shanghai


Guilin, Guangxi


Yangzhou, Jiangsu

JST® POWER EQUIPMENT

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