

Type PMI, 121-169 kV, up to 63 kA Power Circuit Breaker



With a large installed base and proven track record, the PMI breaker offers unequalled performance and reliability.



Independent Pole Operation (IPO) mechanism and power quality improvement through controlled switching

Three type HMB-1 spring-hydraulic mechanisms are located within the 145PMI breaker control cabinet. Each mechanism drives a separate interrupter to provide independent pole operation. A

stack of disk springs within each unit stores mechanical energy. That energy is hydraulically translated through an operating shaft to open and close the contacts of its respective interrupter. Spring charge is automatically maintained by a universal motor and pump. Each fully integrated mechanism is self lubricating and hermetically sealed, affording excellent reliability and long term stability.

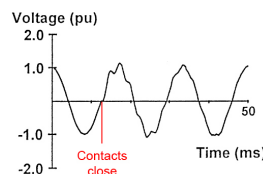
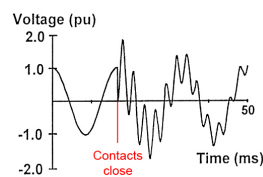
Conventional gang-operated circuit breakers switch their loads randomly with respect to the bus voltage. That can severely degrade power quality due to the resulting generation of potentially damaging voltage and current transients. Maximum voltage transients occur, for example, when a capacitor bank is energized at a bus voltage peak.

Standard features

- Dead tank design, with one 3-cycle self blast interrupter per tank on a galvanized steel frame
- National Board certification of interrupter tanks per the ASME Pressure Vessel and Boiler Code
- All tanks factory leak tested in a hard-vacuum chamber with a helium mass spectrometer
- Certified per ANSI C37.04, C37.06, and C37.09 Standards
- Three maintenance-free HMB-1 spring-hydraulic mechanisms
- Frame mounted NEMA-3R steel control cabinet protected with TGIC polyester powdercoat finish
- Externally accessible current transformers enable simple field change-out without degassing breaker and bushing removal
- One piece interrupter assembly simplifies field change-out whenever end of life is reached by eliminating need for internal tank mountin gof separate parts and alignment
- Single tank-mounted gas density monitor and pressure gauge
- Porcelain bushings
- Continuous current ratings through 4000 A
- Ships fully assembled and factory tested with 5 psig SF₆ gas (bushings may be removed for export transit)

Options and accessories

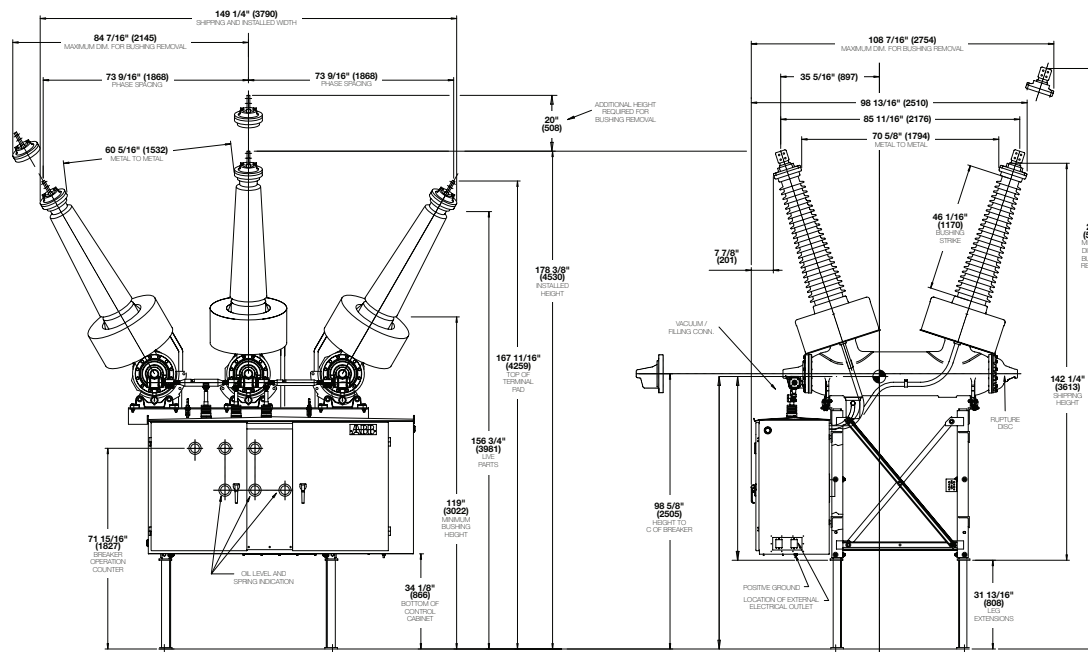
- Switching Control Sentinel (SCS) for reduction of switching transients
- Condition monitoring with the Circuit Breaker Sentinel (CBS)
- Density monitor and temperature-compensated pressure gauge directly-mounted on each tank
- Extra creep and/or extra strike bushings for special applications
- Silicone rubber composite bushings
- Tank heaters for operation in ambient temperatures below -30°C
- High seismic designs



Adding the optional Switching Control Sentinel (SCS) enables a 145PMI breaker to reduce the severity of such transients by controlling each phase to close near a respective voltage zero crossing, which dramatically improves system power quality.

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Rated capabilities

Circuit Breaker Type	Rated Maximum Voltage (kV, rms)	Short Circuit and Short Time Current (kA, rms)	Maximum Continuous Current (A, rms)	Rated Interrupting Time (Cycles)	Full Wave Withstand Voltage (kV, Peak)	Power Frequency Insulation Withstand Voltage (kV, rms)	2 μ -sec Chopped Wave Impulse Voltage (kV, rms)	Closing and Latching Current (kA, Peak)
121PMI40-20	121	40	2000	3	550	260	710	104
121PMI40-30	121	40	3000	3	550	260	710	104
121PMI40-40	121	40	4000	3	550	260	710	104
121PMI50-20	121	50*	2000	3	550	260	710	130
121PMI50-30	121	50*	3000	3	550	260	710	130
121PMI50-40	121	50*	4000	3	550	260	710	130
121PMI63-20	121	63*	2000	3	550	260	710	164
121PMI63-30	121	63*	3000	3	550	260	710	164
121PMI63-40	121	63*	4000	3	550	260	710	164
145PMI40-20	145	40	2000	3	650	310	838	104
145PMI40-30	145	40	3000	3	650	310	838	104
145PMI40-40	145	40	4000	3	650	310	838	104
145PMI50-20	145	50*	2000	3	650	310	838	130
145PMI50-30	145	50*	3000	3	650	310	838	130
145PMI50-40	145	50*	4000	3	650	310	838	130
145PMI63-20	145	63*	2000	3	650	310	838	164
145PMI63-30	145	63*	3000	3	650	310	838	164
145PMI63-40	145	63*	4000	3	650	310	838	164
169PMI40-20	169	40	2000	3	750	365	968	104
169PMI40-30	169	40	3000	3	750	365	968	104
169PMI40-40	169	40	4000	3	750	365	968	104
169PMI50-20	169	50*	2000	3	750	365	968	130
169PMI50-30	169	50*	3000	3	750	365	968	130
169PMI50-40	169	50*	4000	3	750	365	968	130

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* 12 nF/phase line-to-ground capacitance required for ANSI 90% short line fault interrupting performance. (Note: Only required if circuit breaker is applied in an overhead line protection application. Not required for shunt capacitor bank switching.)

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