

Power Circuit Breaker

121 kV through 169 kV Type PM

Descriptive Bulletin
33-300B



The PM breaker is designed with components and experience gained through other quality ABB SF₆ breakers. This experience and the unequalled performance records of ABB breakers stands as a model for this design.

The 121/145/169PM breaker consists of three cast aluminum tanks containing interrupter units that are mounted on a single support frame. Moving contacts are operated by an FSA (40 kA) spring mechanism or HMB-1 hydraulic spring operating mechanism (50/63 kA).

Options and Accessories

- high-creep and high-altitude bushings
- condition monitoring
- synchronous switching
- spring-hydraulic mechanism (HMB, ref. 33-901B) for synchronous switching
- high seismic design
- suitable down to -50°C ambient (tank heaters required for operation below -30°C)

Standard Features

- dead tank design
- reliable FSA-2 spring operating mechanism (std. at 40 kA), or HMB-1 hydraulic spring operating mechanism (50/63 kA) (ref. 33-901B, 33-902B)
- three-cycle interrupting time
- single self-blast interrupter per phase
- ASME pressure vessel certification for unfired pressure vessels
- three tank construction
- exterior bushing current transformers
- control cabinet houses the mechanism, current transformer terminal blocks and the electrical control components
- porcelain or composite bushings that meet or exceed all applicable ANSI and NEMA design specifications
- porcelain or composite bushings
- isolated gas systems provided per pole with mini-gas monitor and pressure gauge
- design tested to meet or exceed ANSI standards

The ABB Advantage . . .

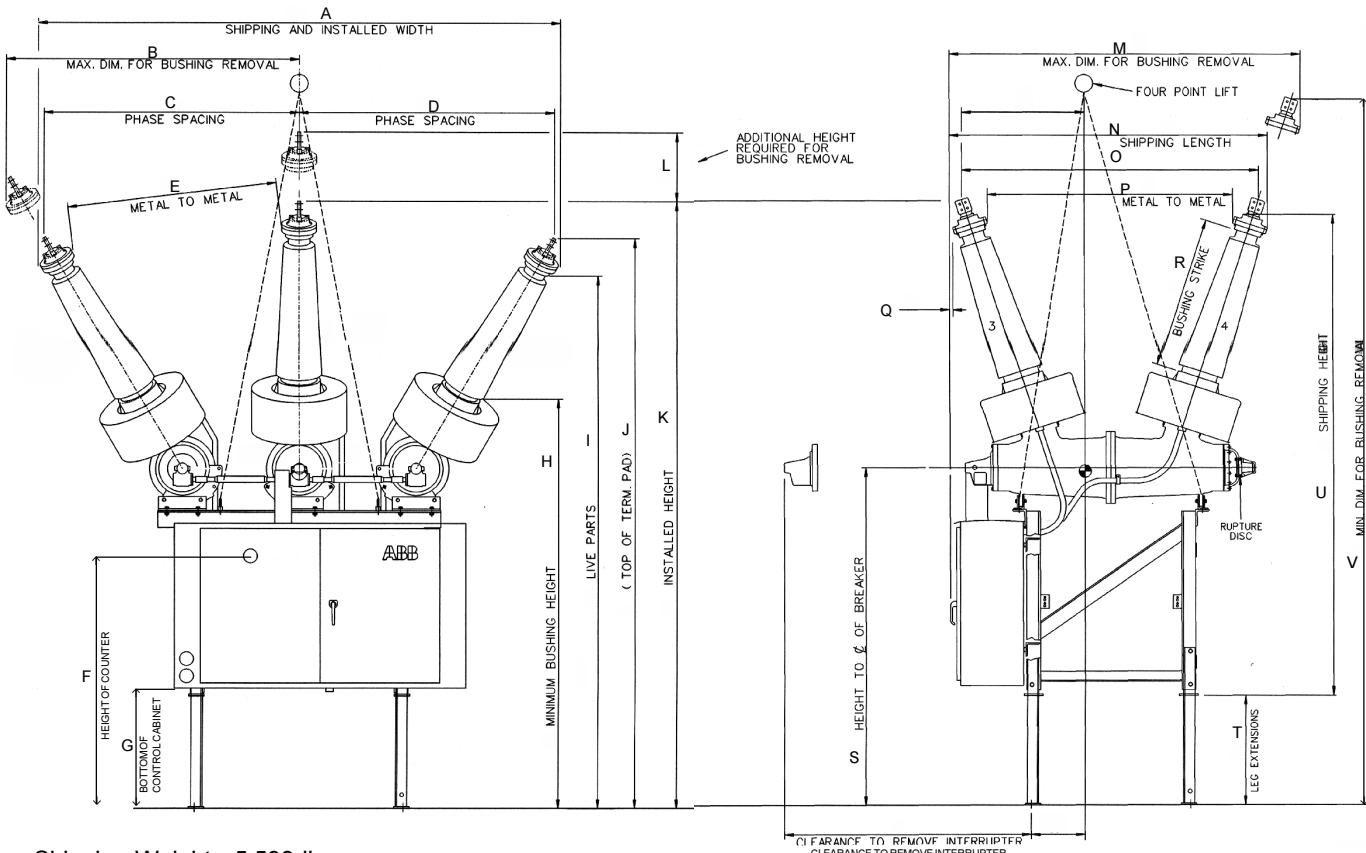
- Light-weight design reduces foundation requirements and saves construction cost.
- Gas monitor on each phase eliminates gas tubing to reduce or eliminate gas leaks.
- Current transformers can be replaced or changed in the field without removing the bushings, minimizing replacement costs.
- Available composite bushings eliminate the cost to hot-wash bushings in the field.
- Simple, low-energy mechanism results in lower mechanical stresses during breaker operation, reducing maintenance costs.
- Shipped fully assembled and factory tested with 5 psig SF₆ gas pressure.
- High-performance interrupter rated 40 kA without capacitors saves on initial cost of the breaker and reduces application engineering concerns.
- Installation services available ranging from complete turn-key to technical assistance can minimize installation costs.

ABB stands ready to work with you, the customer, to provide technical expertise, training and support to reduce your total cost of ownership.



Shipping and Installation

The 121/145/169PM power circuit breaker is shipped fully assembled. By extending the breaker legs, mounting the breaker on the pad and adding the required quantity of SF₆ gas, the breaker is ready for testing and service.



Shipping Weight: 5,590 lbs.

Installed Weight: 5,654 lbs.

DIMENSION IN INCHES										
A	B	C	D	E	F	G	H	I	J	K
150 $\frac{1}{2}$	85	73 $\frac{1}{2}$	73 $\frac{1}{2}$	61	72 $\frac{3}{4}$	36-7/8	118	155	166 $\frac{3}{4}$	177 $\frac{1}{2}$

DIMENSION IN INCHES										
L	M	N	O	P	Q	R	S	T	U	V
20	98 $\frac{1}{2}$	92	84	69	1-7/8	46	98 $\frac{1}{2}$	31	142	197 $\frac{1}{2}$

Breaker	Maximum kV, RMS	Continuous A, RMS	Interrupting kA, RMS	60 Hz Freq. kV	BIL KV Crest	Chopped Wave kV Crest 2 μ 3 μ
121PM40 50/63	121	2000, 3000 4000, 5000	40, 50/63*	260	550	710 632
145PM40 50/63	145	2000, 3000 4000, 5000	40, 50/63*	310	650	838 748
169PM40 50	169	2000, 3000 4000, 5000	40, 50*	365	750	968 862

* 50/63 kA requires 12 nF shunt capacitors for 90% short-line fault performance.

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