

PASS – Plug And Switch System

PASS MOS 420 kV

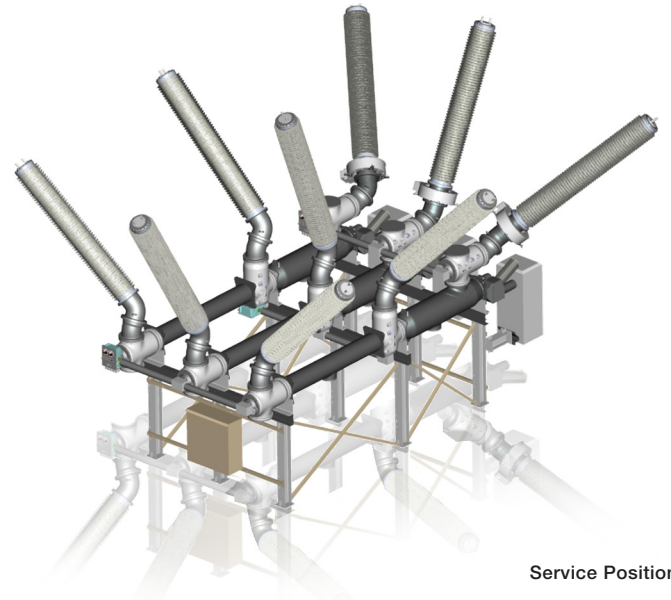
ABB's high voltage hybrid technology switchgear, also known as mixed technology switchgear by IEC, PASS for ratings of 420 kV / 63 kA (50-60 Hz).

PASS (Plug And Switch System) is a family of compact, prefabricated High Voltage modules for HV substations, providing the functions of Circuit Breaker (CB), Disconnecter (DS) and Earthing Switch (ES) and Current / Voltage Transformers (CT / VT).

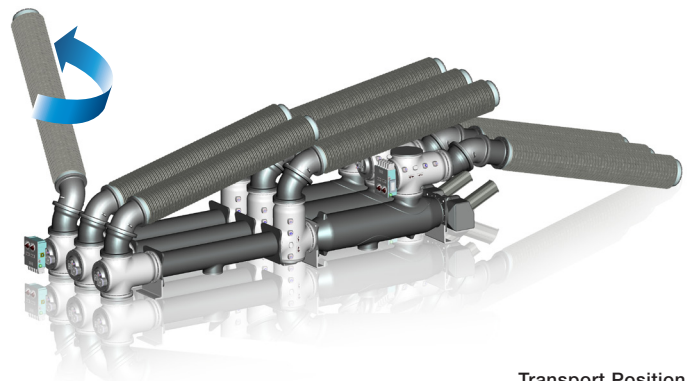
PASS MOS 420 kV is delivered to site fully assembled, and this important characteristic ensures fast installation and commissioning of 420 kV switchgear.

One of the main characteristics of PASS is the possibility to be shipped and installed without assembling any active parts at site. The goal of being shipped completely assembled is reached by a simple, safe and effective tool to perform the rotation of bushings from service to transportable position, due to a robust sealing interface capable ensuring tightness during and after rotations.

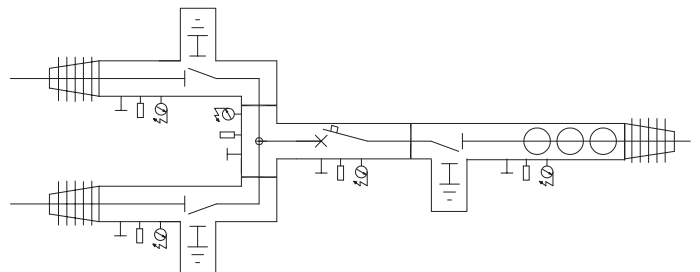
PASS MOS	420 kV
Standards	IEC, IEEE
Rated Voltage	420 kV
Rated Frequency	50 / 60 Hz
Rated Normal Current	5000 A
Maximum Breaking Current	63 kA
Rated Short-Time Current	63 kA, 3 s
Lightning Impulse Withstand Voltage (LIWV)	1425 kV (ph-gnd, ph-ph) 1425(+240) kV (across open s.d.)
Power Frequency Withstand Voltage (PFVV)	650 kV
Chopped Wave (CW), 2 μ s	1680 kV
Switching Impulse Withstand Voltage (SIWV)	1050 kV (ph-gnd, with closed s.d.) 900 (+345) kV (across open s.d.) 1575 kV (ph-ph)
Temperature Range	-30 / +40 °C (-55 °C with mixed gas / heaters)
Creepage distance	31 mm/kV (very Heavy)
Leakage Rate	< 0.5% / year



Service Position



Transport Position



Savings for the customer are:

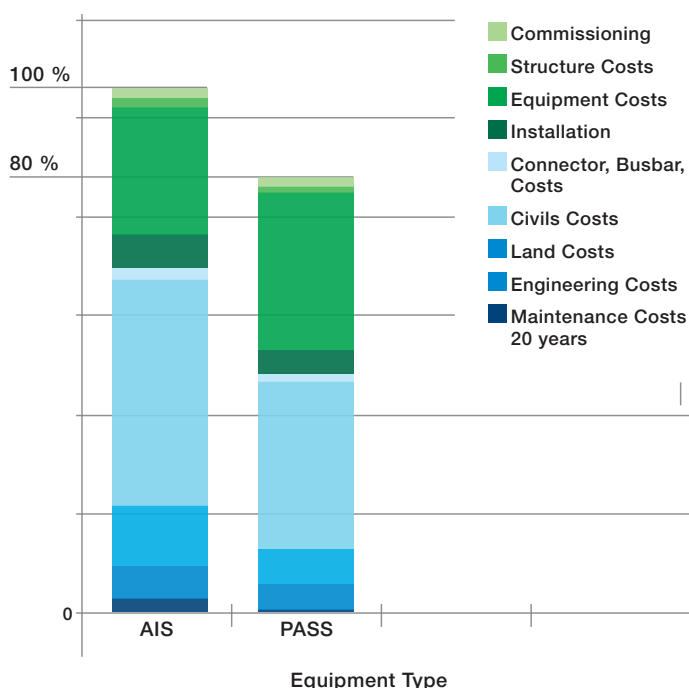
- space required reduced to one-third when compared with AIS configuration
- reduced time for erection and commissioning
- no repetition of HV test on site.

Life Cycle Cost study shows that costs related to preventive maintenance during the first 20 years of the equipment operation is minimised with respect to conventional air insulated solutions.

All the necessary operations are carried out during service and without the need of any outage, this is mainly attributed to the fact that there is no need to clean the contacts of the active parts as they are insulated in SF6 Gas.

In this way the man hours required to service the equipment is greatly reduced thus increasing the systems/equipment overall availability.

Full economical comparison for 420 kV substation design

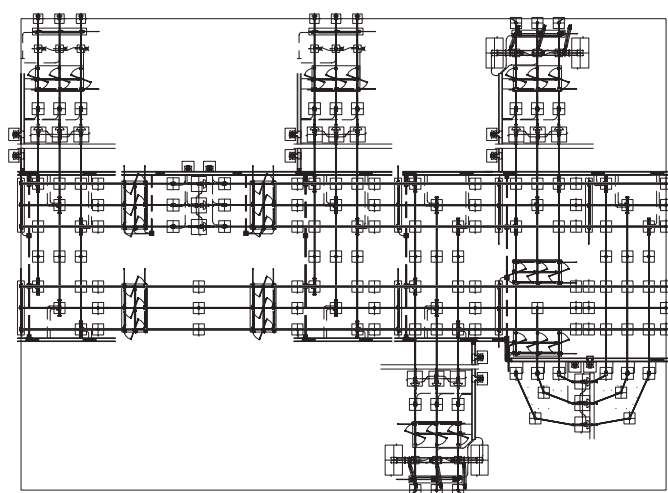


PASS MOS 420 kV uses the well proven ABB single-chamber 420 kV / 63 kA interrupting unit. The Circuit breaker drive is a well proven spring drive, being used in the ABB LTB product family.

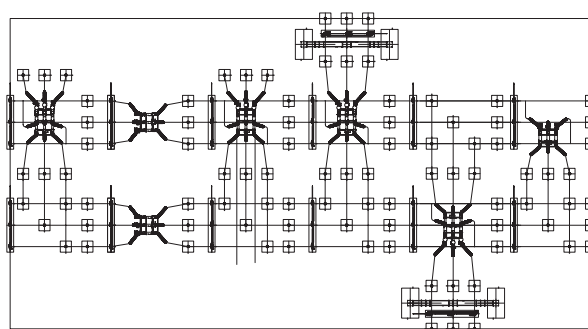
PASS MOS 420 kV is available in the following configurations:

- Single Bus-Bar (SBB)
- Double Bus-Bar (DBB)
- Double Circuit Breaker (DCB)

Keeping the usual modularity of PASS family, is possible to obtain an almost unlimited number of custom configurations simply combining the existing and tested components and cable terminations, fast earthing switch, voltage transformers and surge arresters available as options.



6 Bay 400 kV AIS Solution



6 Bay 400 kV PASS Solution

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