



ABB AG - Calor Emag Medium Voltage Products

Embedded Poles

Embedded Poles



- High dielectric strength without any further external measures
- Optimum protection of the vacuum interrupter from moisture, dust and external damage
- Suitable for different climatic conditions and altitudes of site
- High reliability and long life

Embedded Poles



- Easy adaption to circuit-breaker
- Maintenance-free
- High quality standard
- Shop Floor Control (SFC) – System enabled
- Efficient increase of the dielectric strength without usage of green-house gas

Embedded Poles

For indoor application (standard)



- 1) Rated lightning impulse withstand voltage/
rated power frequency withstand voltage
- 2) Mechanical operating cycles

	PT1	P3	P4	P4-S
	VGE4 / VG4-S	VG4 / VG4-S / VG6	VG5 / VG4 / VG4-S	VG5 / VG4
	12 / 17.5 kV	12 / 17.5 kV	24 kV	...24 kV
	...1250 A	...1600 A	...1250 A	...1250 A
	...31.5 kA	...40 kA	...25 kA	...20 kA
	...95 / 42 kV ¹⁾	...95 / 42 kV ¹⁾	...125 / 50 kV ¹⁾	...125 / 50 kV ¹⁾
	50,000 ²⁾	30,000 ²⁾	30,000 ²⁾	30,000 ²⁾

Embedded Poles

For indoor application (high current)



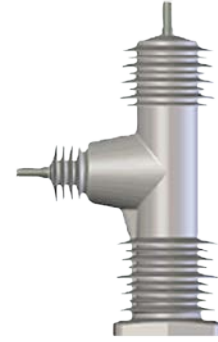
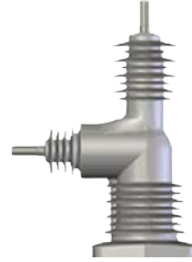
- 1) 2500 A / 3150 A with heat sink
- 2) Rated lightning impulse withstand voltage/ rated power frequency withstand voltage
- 3) Mechanical operating cycles

	PT2 *	P2	P5	P6	P7
	VG4-S / VG6	VG4-S / VG6	VG4-S / VG6	VG6 / VG8 / VG8-S	VG7
	12 / 17.5 kV	12 / 17.5 kV	24 kV	36 / 40.5 kV	12 / 17.5 kV
	...2500 A ¹⁾	3150 A ¹⁾	...2500 A ¹⁾	...2500 A	...3150 A ¹⁾
	...40 kA	...40 kA	...31.5 kA	...40 kA	...50 kA
	...95 / 42 kV ²⁾	...95 / 42 kV ²⁾	...125 / 50 kV ²⁾	...200 / 95 kV ²⁾	...95 / 42 kV ²⁾
	50,000 ³⁾	30,000 ³⁾	30,000 ³⁾	30,000 ³⁾	30,000 ³⁾

* Pole available soon

Embedded Poles

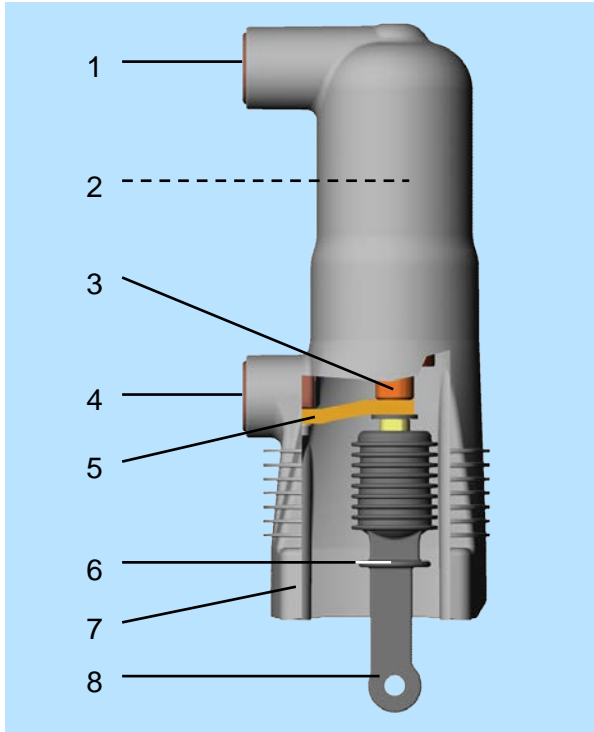
For outdoor application



1) With integrated current sensor for recloser application

OP0	OP1	OP2
12 kV	15 / 27 kV	38 kV
...630 A	...1000 A ¹⁾	...1200 A ¹⁾
...20 kA	...16 / 12 kA ¹⁾	...16 kA ¹⁾

Embedded Poles Innovative Technology



Schematic diagram

- 1 Upper terminal
- 2 Vacuum interrupter
- 3 Stem
- 4 Lower terminal
- 5 Flexible connection
- 6 Insulated push-rod with contact force springs
- 7 Fixing point
- 8 Connection to drive

Embedded Poles

State-of-the-art manufacturing process



- Latest manufacturing methods guarantee process stability and quality at reduced environmental stress
- Consistent development of products and processes
- Control and monitoring of all essential process parameters
- Efficient increase of the dielectric strength without usage of greenhouse gas

Embedded Poles

Quality control



- Verification of dimensional conformity
- Measurement of voltage drop across the pole
- Mechanical function test
- Checking of contact spring force
- Examination by visual assessment

Embedded Poles

Applications as core components



The applications for Embedded Poles as core components include:

- Power plants
- Transformer substations
- Chemical industry
- Steel industry
- Automobile industry
- Airport power supply
- Shipbuilding
- Power supply to buildings

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