

RPH3

Controlled switching device for enhanced switching of circuit breakers up to 800 kV

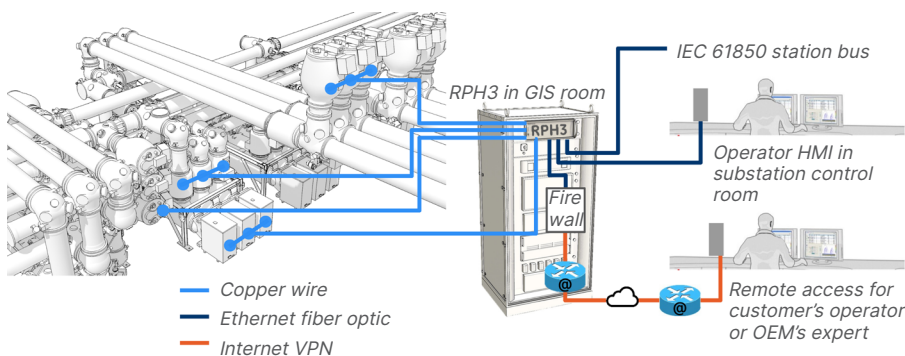
As part of GE Vernova Energy Connection, Grid Solutions makes the most of more than 80 years of experience in design, material selection, development, engineering, manufacturing, and servicing of circuit-breakers.

High reliability

- Successful experience with over 1,000 RPH3 around the world
- Drastic decrease of switching transients
- Minimization of inrush current, overvoltage and stress
- Accurate and fast analysis of current and voltage for optimal switching time
- No impact on protection design and wiring

Great versatility

- Dynamic adaptation to all network and load characteristics
- Compatibility with a wide range of circuit breakers (with appropriate dielectric strength and operating mechanisms with appropriate operating time scatter)
- Compensation for coil voltage, ambient temperature, driving pressure, idle time, and long-term operation time drift



Customer benefits

- Longer lifespan of assets
- Greater network availability
- Higher power quality
- Smarter than closing resistor: cost-effective and reliable
- Remote support

Optimum switching for grid assets

- Power transformers
- Shunt reactors
- Long transmission lines and cables
- Shunt capacitor banks and AC filters

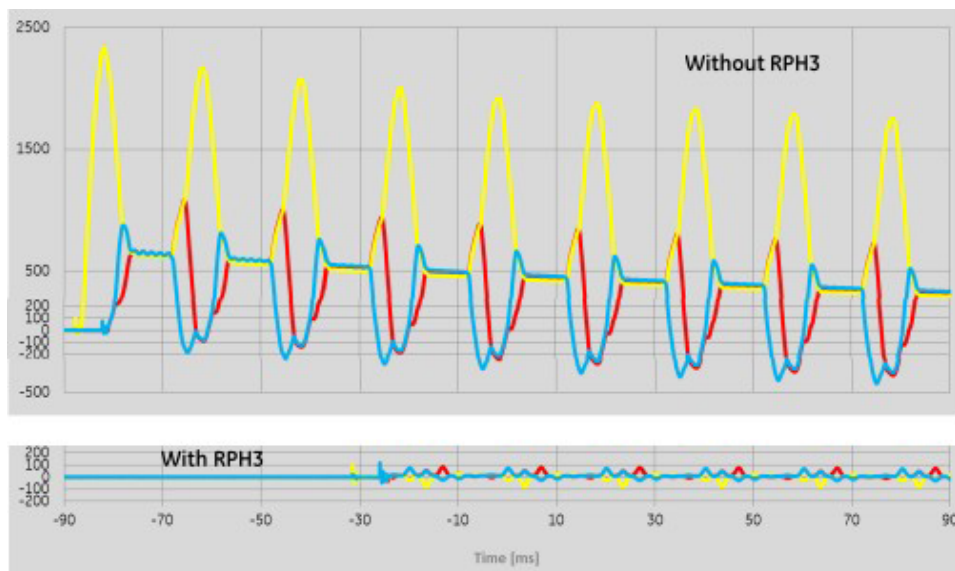
Smart Grid features

- Remote access
- Available with IEC 61850 communication

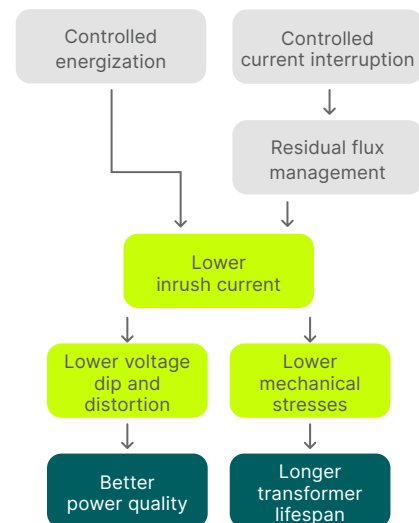


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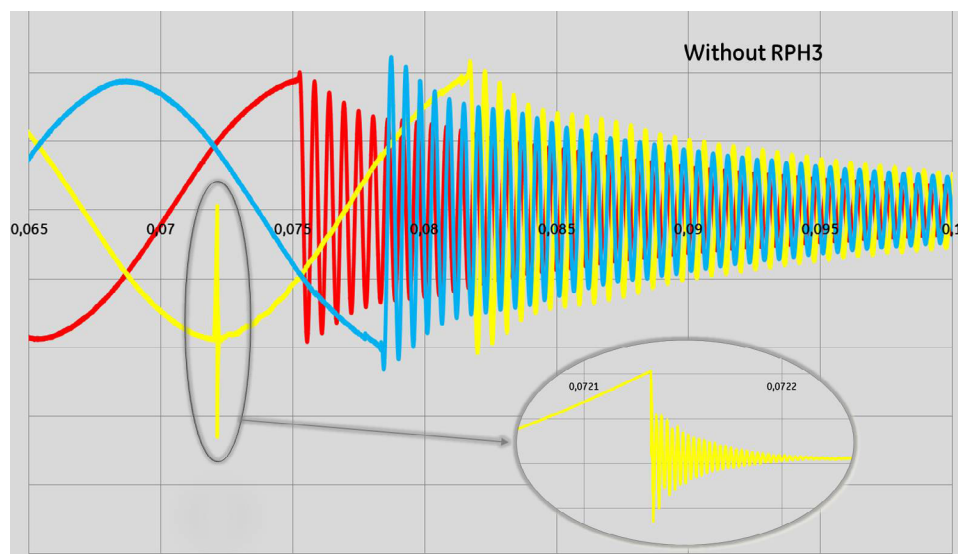
Controlled switching of power transformers



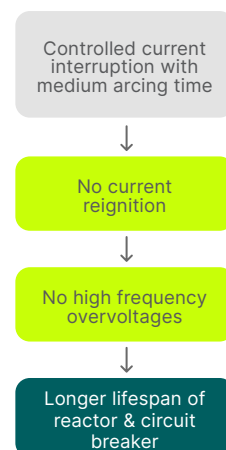
Inrush current



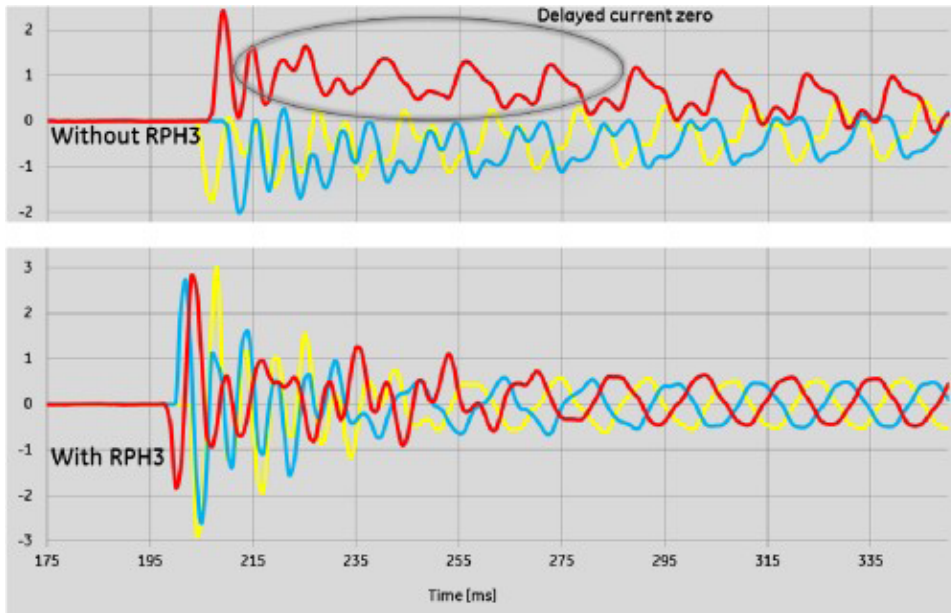
Controlled switching of power transformers



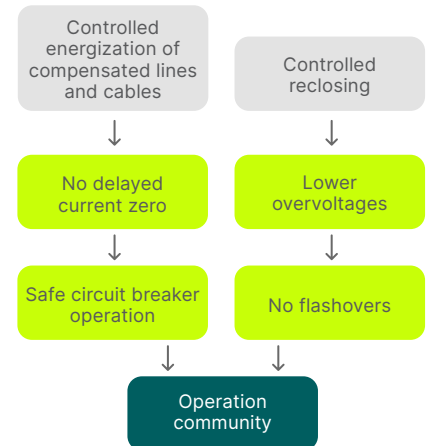
Overvoltages



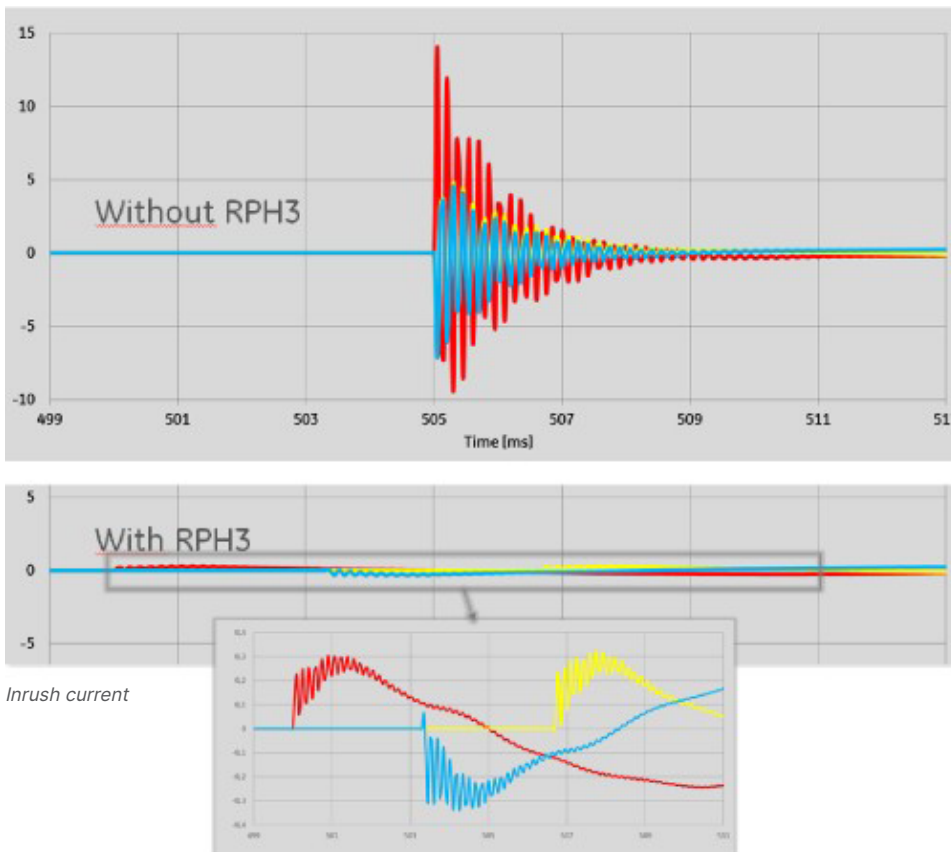
Controlled switching of long transmission lines and cables



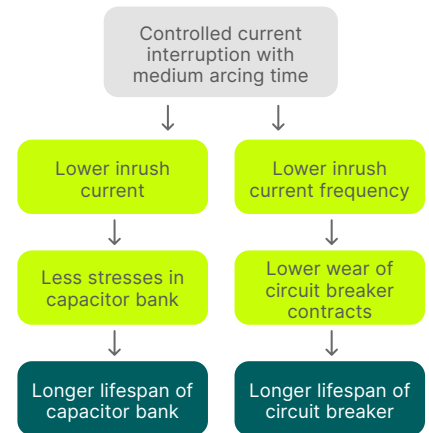
Compensated line charging current



Controlled switching of shunt capacitor banks



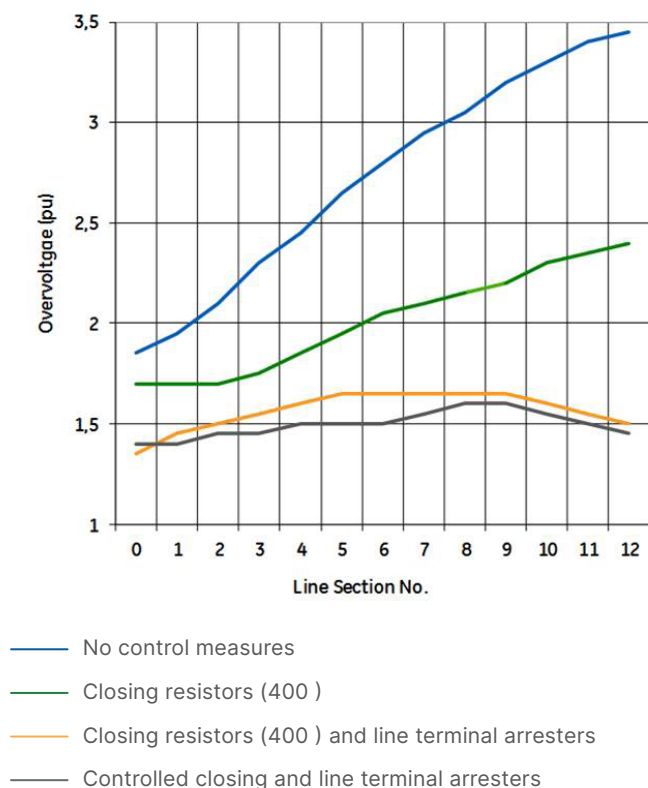
Inrush current



General Ratings

Temperature	°C	-25 to +55 (in operation)
Main supply	VDC / VAC	48 (-15%) - 250 / 11 - 240 ± 20%
Power consumption	W	<20
Solid-state control of circuit breaker	V / A ms (L/R of CB coil)	48 - 250 / 10 - 15 300 @ 10 A / 200 @ 15 A
Alarm relays operating range	V / A	230 / 5
Synchronizing voltage range	V (at 20-60 Hz)	15 - 330
EMC immunity standards		IEC 61000-4-2, 4, 5, 8, 16 Level 4 IEC 61000-4-3, 6, 17 Level 3
Emission standard		EN 55022 Class A
Digital interface		Ethernet 100 Mbit/s
Communication protocol		Ready for 61850, TCP-IP

Transmission line voltage profile for various overvoltage mitigations (P.U.)



Compensation

COIL VOLTAGE	UNIT	COIL SUPPLY RANGE
CB temperature	°C	-55 to +70
Driving pressure (hydraulic mechanism)	bar	Unlimited
Idle time	Days	Unlimited
Long-term operation time drift	ms	Self-learning

For more information, visit
gevernova.com/grid-solutions

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