

CSD100

Controlled Switching of Compensation Load

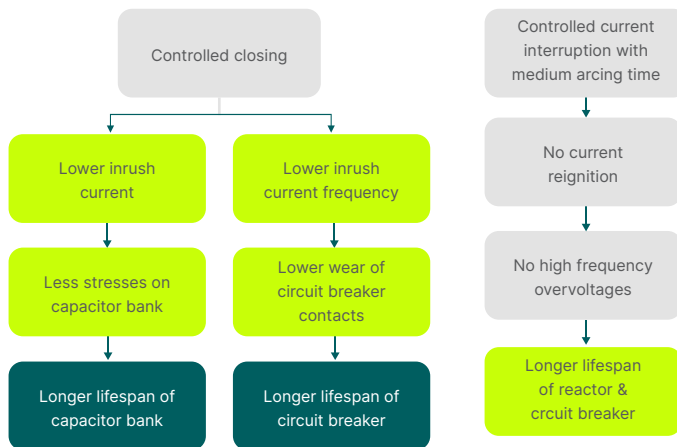
CSD100 is an advanced controlled switching device for high-voltage AC circuit-breakers for any kind of application.

Challenges

Intermittent power sources generate important daily load variations. Capacitor banks and shunt reactors help stabilize and improve the power factor. Acting as reactive power generators, their switching needs to be controlled precisely to mitigate the related electrical transients. This limits the damageable stress on the circuit breaker and the compensation load.

Reactive Power Compensation in Safe Conditions

CSD100, used with Grid Solutions' advanced circuit breakers, is a cost-effective solution to reduce stress on reactive power compensation equipment and increase their lifetime.



Your Primary Equipment in Safe Hands

- With extensive data acquisition and storage capabilities, the CSD100 allows for extensive monitoring and optimized switching to protect equipment. Together, with its digital communication abilities, the CSD100 plays a key role in your asset performance management (APM).
- CSD100's design simplifies substation integration.
- Built-in cybersecurity features, in line with the latest NERC, IEC, IEEE standards, ensure a high security level.



Safe Switching in Reactive Power Compensation

- Voltage dip reduction
- Inrush current mitigation
- Transformer stress limitation

Advanced Communications

- IEC 61850-8-1
- Easy integration into digital substation
- User-friendly Web HMI

Reliable and Versatile

- Switching performance evaluation
- Alarms in case of re-ignition
- High speed transient recorder
- Assisted commissioning mode DIN rail or 19" bay mounting

Grid Solutions' Advantage

- Expert high-voltage original equipment manufacturer solution including circuitbreaker and controlled-switching device
- Fourth generation of point-on-wave controllers



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Switching Transients Mitigation

LOAD	OPERATION	PRIMARY GOAL	MITIGATION PRINCIPLE
Capacitor Bank	Closing Opening	Reduce inrush current Reduce restriking probability	Closing at zero-voltage across CB terminals Switching out with improved arcing time
Shunt Reactor	Closing Opening	Reduce current asymmetry and/or pre-strike times Prevent from CB reignition	Switching-in at voltage peak or intermediate voltage Switching-out inside reignition-free window

Self-adaptation for High Accuracy

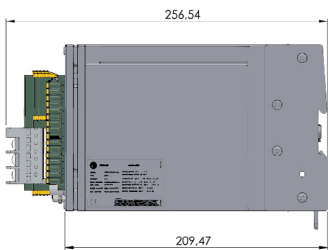
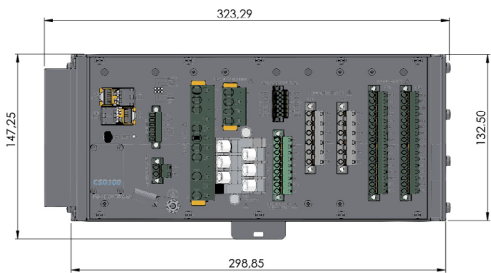
Used with an advanced circuit breaker, CSD100 is able to take the circuit breaker conditions into consideration (ambient temperature, DC control voltage, driving pressure of hydraulic mechanisms, circuit breaker idle time, circuit breaker long-term operation time drift, etc.) CSD maintains the highest possible switching accuracy.

General Ratings

DESCRIPTION	VALUE
Weight	5.8 kg (12.8 lbs) with rack mounting brackets
Operation temperature range	-40°C to +55°C (continuous) / -40°C to +70°C (16h)
Enclosure class	IP5x
Product Electrical safety	IEC 60950-1; IEC 61010-1; IEC 60255-27
EMC compliance	IEC 61000-6-5; IEC 60255-26; EN 55032
Power consumption	< 30 W
Switching time resolution	< 0.01 ms
Transient data acquisition	40 kHz
Input transducer interfaces	4 × 4-20 mA, 24 V, 2 or 3 wires
Digital communication interface	100 Mbits/s/ or/and 1 Gbit/s SFP transceiver x 4 (RJ45 × 2 / LC optic fiber x 2)
Alarm signaling	2 relays available for signaling urgent and non-urgent alarms
LEDs signaling	6 LEDs available to deliver status of the controller (power supply, ready to operate)
Switching performance evaluation	Accuracy of the controlled closing and controlled opening operations, within the required tolerance
Power quality indicators	Voltage dip, peak current, current asymmetry
Counter	Number of controlled and random operations, number of re-ignition

Dimensions

Example for DIN rail mounting (installation in low-voltage cabinet of the circuit breaker)



Other mounting possibility
19" rack front panel
Optional: Local HMI on request

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



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