

# Switchboard vs. switchgear

Characteristic	Switchboard	Switchgear
Standards	CSA® C22.2 No. 31 CSA C22.2 No. 244, harmonized with UL® 891	CSA C22.2 No. 31 ANSI C37.20.1
Circuit protection	Fusible switches, moulded-case circuit breaker or power circuit breakers (fixed or drawout)	Power circuit breakers (fixed or drawout)
Device mounting	Typically group mounted	Individually mounted
Breaker features	Breakers are factory sealed Internal accessories factory mounted Breaker accessories can be field installed	Built for field maintenance, modification and inspection Accessory can be field mounted Maximum selective coordination
Short-time rating	See breaker specifications	Short-time 30-cycle withstand ratings up to 85 kA (better selective coordination)
Production testing	Two production tests: dielectric voltage-withstand and ground fault protection	Seven production tests: dielectric, grounding of instrument transformer case, electrical operation and control wiring, control-wiring continuity, polarity verification, sequence and optional control-wiring dielectric
Service conditions	Service conditions are not addressed	Ambient air temperatures and altitude specified Derating factors are given for operating in varying altitudes
Temperature tests	Tests are not required for copper if bus density is 1000A per square-inch, or for aluminum if bus density is 750A per square-inch	Required for all bus ratings
Short-time withstand current test	Determined by testing at 600V for three cycles at 60 Hz	Determined by testing at 635V for four cycles at 60 Hz
Short-circuit bus testing	Phase to neutral only required under certain conditions and phase to ground not required	Requires phase to neutral and phase to ground
Barriers	Optional internal barriers	Optional barriers between breakers and bus and between breakers themselves
Enclosure structure	Requires indoor paint finish to pass 24-hour salt spray test Outdoor paint finish must pass 600-hour test	Requires indoor paint finish to pass 200-hour salt spray test Outdoor paint finish must pass 600-hour test
Access	Front or rear access	Front and rear access
Covers	Standard bolted front cover (feeders only)	Hinged front covers

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