

Distribution substation and medium power transformers

RG-D | Submittal-ready specification

Liquid-filled substation transformers from 10 to 60 MVA at 69 kV and 138 kV for data center campus substations, utility and cooperative distribution substations, and Permian compressor stations and gas plants. Lead time 26 to 40 weeks after drawing approval.

Ratings and construction

Ratings	10 to 60 MVA; to 100 MVA on request. Multi-stage ratings such as 30/40/50 MVA ONAN/ONAF/ONAF.
High voltage	69 kV and 138 kV classes. Delta or wye, grounded or ungrounded, as specified.
Low voltage	12.47, 13.8, 24.9, or 34.5 kV. Tertiary winding available.
Basic impulse level	Per IEEE C57.12.00 for the class: 350 kV at 69 kV class; 550 or 650 kV at 138 kV class.
Impedance	7 to 12 percent to the application; about 11 percent typical on 20 to 40 MVA data center units.
Tap changing	Load tap changer per IEEE C57.131, plus or minus 10 percent in 32 steps, vacuum type. De-energized tap changer on the high-voltage winding available.
Cooling and fluid	ONAN/ONAF with mineral oil or natural ester. Sealed tank with nitrogen blanket or conservator with rubber bag.
Temperature rise	65 C. 55/65 C dual rating available.
Construction	Outdoor substation construction. Cover-mounted bushings. Detachable radiators with shutoff valves. Surge arrester brackets. Bushing current transformers for protection and metering. Control cabinet with terminal blocks and heater.
Monitoring	Winding and top-oil temperature indicators, liquid-level gauge, pressure relief device, sudden-pressure relay, dissolved-gas monitor provisions. Alarm and trip contacts wired to the control cabinet.
Lead time	26 to 40 weeks after drawing approval. Production slot confirmed at order.

Standards and testing

IEEE C57.12.00, IEEE C57.12.90, IEEE C57.12.10 (power transformers 230 kV and below), IEEE C57.131 (load tap changers), IEEE C57.91 (loading guide), IEEE C57.104 (dissolved gas analysis). Built to RUS Bulletin 50-91 (S-3) on request for cooperatives. Routine tests on every unit per C57.12.90 with certified reports: ratio, polarity, resistance, losses, impedance, applied and induced voltage, insulation power factor, leak test. Design tests available: lightning impulse, temperature rise, audible sound, short-circuit withstand. Witnessed factory acceptance tests on request.

Options

Load tap changer. 650 kV BIL at 138 kV class. Natural ester fluid. Conservator. Dissolved-gas monitor. Tertiary winding. Low-sound design. Seismic qualification. Bushing current transformers to the relaying scheme. Extended warranty.

Ordering information

To quote, send the primary and secondary voltages, kVA rating, quantity, impedance if specified, fluid, enclosure material, accessories, the site location, and the date units are needed on site. Submittal drawings are returned within 10 business days of order. Quotes are delivered duty paid (DDP) to the site. Request a quote at riogridpower.com/quote or contact@riogridpower.com.

Ratings and dimensions are confirmed on the submittal drawings for each order. Specifications may be revised without notice; the drawing package governs.