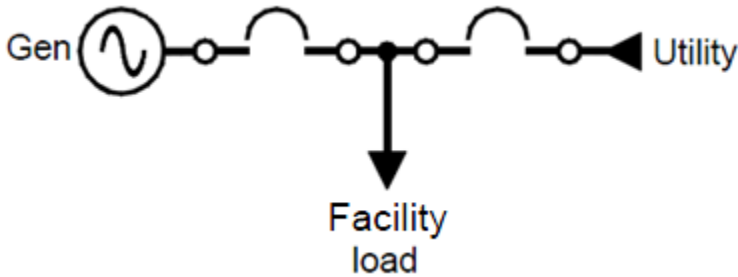


Automatic Transfer Switchgear

Low & Medium Voltage



Available Product Features

- Low Voltage Switchboard (UL891 listed)
- Medium Voltage Switchgear
- Standard Silver Plated Copper Bus
- Provides All Necessary Overcurrent Protection
 - No additional Generator or Utility Circuit Breakers Required
- Available as Service Entrance as Required by NEC
- Includes Active Synchronizing
- Utility RTU and DCS Compatible
- Available as Closed or Open Transition
 - Closed Transition Eliminates Power Outage During Transfer
 - Open transition prevents connection of generator to utility
- High accuracy electrical metering
- Feeder circuit breakers for a total facility switchgear solution are available

Product Specifications

Voltage:	208 – 600V, 3 phase, 3 or 4 wire (low voltage) 2400 – 15kV, 3 phase, 3 wire (medium voltage)
Current:	Up to 4000A (low voltage) Up to 3000A (medium voltage)
Enclosure:	NEMA 1 for indoor use NEMA 3R for outdoor use (optional)
Dimensions:	Std. low voltage – 28"W x 80"H x (46" or 54" or 62"D)
Metering Accuracy:	0.3% - voltage and current 0.6% - power and energy
Metering Options:	3 varieties of APT true RMS Power Sensors available: PS-V – voltage and frequency sensing PS-P – power sensing (A, kW, PF, kVAR, etc.) PS-E – energy sensing (kW-hrs., kVAR-hrs.)
Generator Protection:	Overcurrent (50/51), undervoltage, overvoltage, under frequency, over frequency
Options:	SCADA-ready Modbus communications port

Overview of Operation

APT utility paralleling switchgear is intended to provide the necessary controls to relieve a utility grid of part of its burden (kW and kVAR) by displacing it onto a generator set. Once the generator set is paralleled to the utility, it is necessary for the switchgear to be able to control engine load level (kW) and generator excitation level (kVAR). This is accomplished by connecting to the engine speed and generator voltage adjust circuits of the generator set. Several operational modes are available:

1. Base load – this mode soft loads the generator set to a constant load level against utility.
2. Import/export control – this mode seeks to maintain constant utility contribution to a site load. This is accomplished by monitoring utility contribution and trimming generator set load levels up and down as site loads change. Import control means the generator set is contributing less than the total site load requirements and the utility supplies the difference. Export control means the generator set is contributing more than the total site load requirements and the utility is absorbing the difference.
3. Seamless load transfer – this mode softly transfers an entire site load to a generator set and back to the utility source. This is accomplished in a “bumpless” fashion by monitoring the generator and utility contribution to the site’s load while loading the generator set. As the generator set softly ramps up in load, the utility contribution consequently softly ramps down. When the generator set has assumed all the site’s load, a utility circuit breaker is then disconnected. Now the generator is supplying site load isolated from the utility source. When it is time to shutdown the generator set, the generator is first synchronized to the utility across the utility circuit breaker. The loading/unloading sequence is now reversed until all the load is gradually transferred to the utility and the generator set is finally disconnected.
4. Automatic standby – this mode of operation continuously monitors the utility. Should the utility fail, the switchgear automatically initiates a sequence that starts and parallels the generators in standby mode, disconnects the utility feed from the load, and then connects the generator bus to the load. When the utility returns and is diagnosed to be “healthy,” the switchgear softly transfers back to utility power in a closed transition fashion and then shuts down the generators. There is no interruption of power during the return to utility source.

Product Information



Control Panel Layout