

Motor generator generator set

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An added benefit is sub cycle momentary ride through. This effect from the motor generator set rides through many short "momentary interruptions". Typical ride-through capability with additional mechanical mass is 1 to 5 seconds. This added protection allows the use of mechanical contactors for emergency bypassing. This is extremely beneficial when faced with the steep costs of not properly shutting down expensive manufacturing equipment.

A motor-generator (an M-G set) is a device for converting electrical power to another form. Motor-generator sets are used to convert frequency, voltage, or phase of power. They may also be used to isolate electrical loads from the electrical power supply line. Large motor-generators were widely used to convert industrial amounts of power while smaller motor-generators (such as the one shown in the picture) were used to convert battery power to higher DC voltages.

Low-powered consumer devices built before 1933, such as vacuum tube vehicle radio receivers, did not use expensive, noisy and bulky motor-generators. Instead, they used an inverter circuit consisting of a vibrator (a self-exciting relay) and a transformer to produce the higher voltages required for the vacuum tubes from the vehicle's 6 or 12 V battery.

In the context of electric power generation and large fixed electrical power systems, a motor-generator consists of an electric motor mechanically coupled to an electric generator (or alternator). The motor runs on the electrical input current while the generator creates the electrical output current, with power flowing between the two machines as a mechanical torque; this provides electrical isolation and some buffering of the power between the two electrical systems.

Before solid state AC voltage regulation was available or cost effective, motor generator sets were used to provide a variable AC voltage. The DC voltage to the generators armature would be varied manually or electronically to control the output voltage. When used in this fashion, the MG set is equivalent to an isolated variable transformer.

Motor-generators have even been used where the input and output currents are essentially the same. In this case, the mechanical inertia of the M-G set is used to filter out transients in the input power. The output's electric current can be very clean (noise free) and will be able to ride-through brief blackouts and switching transients at the input to the M-G set. This may enable, for example, the flawless cut-over from mains power to AC power provided by a diesel generator set.

Motors and generators may be coupled by a non-conductive shaft in facilities that need to closely control electromagnetic radiation; or where high isolation from transient surge voltages is required.



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Similarly, MG sets were used in the PCC streetcar to produce a 36VDC output from the 600VDC traction supply. The low voltage output charges the streetcar's batteries and supplies current for control and auxiliary equipment (including headlights, gong ringers, door motors and electromagnetic track brakes).

Motor-generator sets were often used to provide the high-current D.C. power for carbon arc lamps in large movie projectors in the 1950-60's era, before the carbon electrode arc light was replaced with modern xenon arc lamp projection systems (starting in 1963 in the U.S.).

In principle, any electrical generator can also serve as an electric motor, or vice versa. In hybrid vehicles and other lightweight power systems, a "motor-generator" is a single electric machine that can be used as an electric motor or a generator, converting between electrical power and mechanical power.

While Horlick has a standard product offering, we understand that not every application fits the average solution. That's why we also offer custom solutions, using our standard products as building blocks to engineer and design each system to your individual requirements. We have the engineering expertise to offer custom motor generators designed to meet virtually any requirement. Here are a few of the options we have to customize your motor generator set:

Not ready for ownership? Waiting for your own motor generator set to be built? Our rental units provide a flexible and cost-effective solution for many scenarios where you might not yet be ready for ownership. Over the years, we have repurchased a number of units from customers who were ready for an upgrade. Because of this, we are equipped with a fleet of motor generator sets that we offer on a rental basis.

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