

Monitoring: Electric Power Generation (EPG)

Electric Power Generation is a sector of the industrial market with the specific need of assuring that power sources are running properly, ready for operation and well maintained. With a range of standard configurations for this market, Monico Gateways can add monitoring and integration quickly and easily.

A very common application for Monico Gateways is the monitoring and basic control of natural gas fueled and diesel fueled generators. Genset data is brought in via a dedicated port, depending on the Gateway version, leaving (2) RS-232 ports, (1) RS-485 port, and (1) Ethernet port for gathering data from other system components. Each serial port can communicate via one protocol independently, either master or slave. The Ethernet port can communicate via four protocols simultaneously. The Gateway can also be used to provide data concentration for other devices such as Digital I/O, Analog I/O, Thermocouples, RTD's, Switchgear, and fuel tank level monitoring.

The Gateway collects electrical information from the generator set controller (GSC) and detailed information from electronic engines. If a mechanical engine is used, then we communicate directly with the GSC to gather complete electrical data and basic engine data. Complete fault code support is available. Gensets with mechanical engines will provide about 8-10 valuable monitoring parameters plus fault codes. Other GSCs offer detailed electrical information including line to line and line to neutral voltages, line currents, and various power calculations. Electronic engines will provide about 50-80 additional parameters of detailed information. Some of the larger gensets provide up to about 220 parameters of data for monitoring purposes.

Another common application for our Gateways would be to gather data from an electronic engine and the GSC via a dedicated port (depending on the Gateway version), gather data from an Automatic Transfer Switch (ATS) and a Power Meter acting as a Modbus Master. Engine, electrical, ATS, and Power meter data is then put into a contiguous set of Modbus Registers as a Modbus TCP Slave over Ethernet. BACnet protocol is increasingly more popular over Ethernet and serial for Building Management Systems (BMS), and the gateways also come standard in a list of other protocols.

If a BMS system is not available, then a Gateway PLUS can act as the primary interface if an Ethernet network is available. In this scenario, Gateway offers a pre-configured virtual color touch screen HMI over the internet. The email server can notify the customer when certain conditions occur and the Virtual HMI is available from anywhere on the network for viewing live data and detailed fault codes. If an Ethernet network is not available or the customer does not want the Generators connected to the BMS, then we can also offer cellular solutions that provide a cost-efficient alternative.