



Monitoring alarms and operating parameters is an important part of any facilities management program. Many options are available for monitoring emergency or primary power. As such for complete system monitoring, the generator has to be equipped with a monitoring system. Monitoring engine parameters allows for early diagnosis of developing problems. Repairing issues before they advance to shut-down failures will result in raising the reliability of both emergency and primary power systems. Basic configurations outlined below:

- Generator sets with engines that are not controlled by an ECM (Electronic Control Module). Monitoring capabilities limited to analog converted to digital signal via an A to D converter. Basic generator set parameters can be monitored, referred to as “Historic Generator Sets”.
- ECM controlled generator sets. Common manufacturer practice is to incorporate a generator control module (monitors generator parameters) and engine control module (monitors engine parameters) into one operating system. This configuration allows for advanced parameter monitoring and control referred to as “Advanced Generator Sets”.

There are various control modules used in generators. Different communication ports are available on these modules according to the property of the module. Monitoring up to only 10 mt can be performed by some modules while remote monitoring can be performed by some. At this point, communication properties of control module have importance. Below mentioned communication properties and external communication modules used vary by the brand of the module used.

**Single Generator Monitoring**

- Cabled monitoring up to a distance of 10 mt to the generator (RS232 Protocol-RS-232 Port is needed in the computer to be monitored. If there is no RS 232 port in the computer, RS232-Usb converter will be needed)



- Cabled monitoring up to a distance of 100 mt to the generator. (RS-485 communication protocol- RS485-Usb converter is needed in addition to the computer to be monitored.)

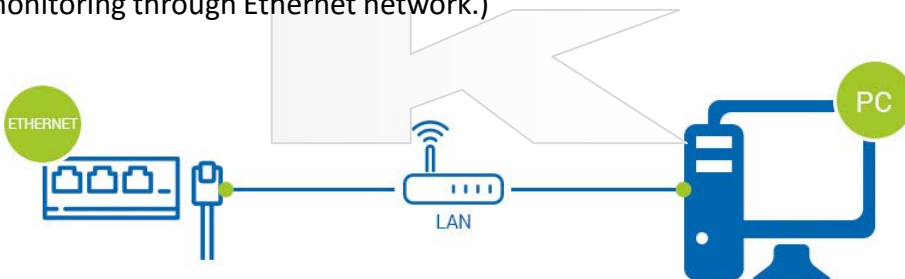




- Wireless remote access through GSM modem (GSM should be available in addition to both control module and the computer to be monitored)



- Monitoring through Ethernet line (It is suitable for monitoring up to 100 mt in cabled form or remote monitoring through Ethernet network.)



- Process of sending message to mobile phone through GSM modem in case of failure.

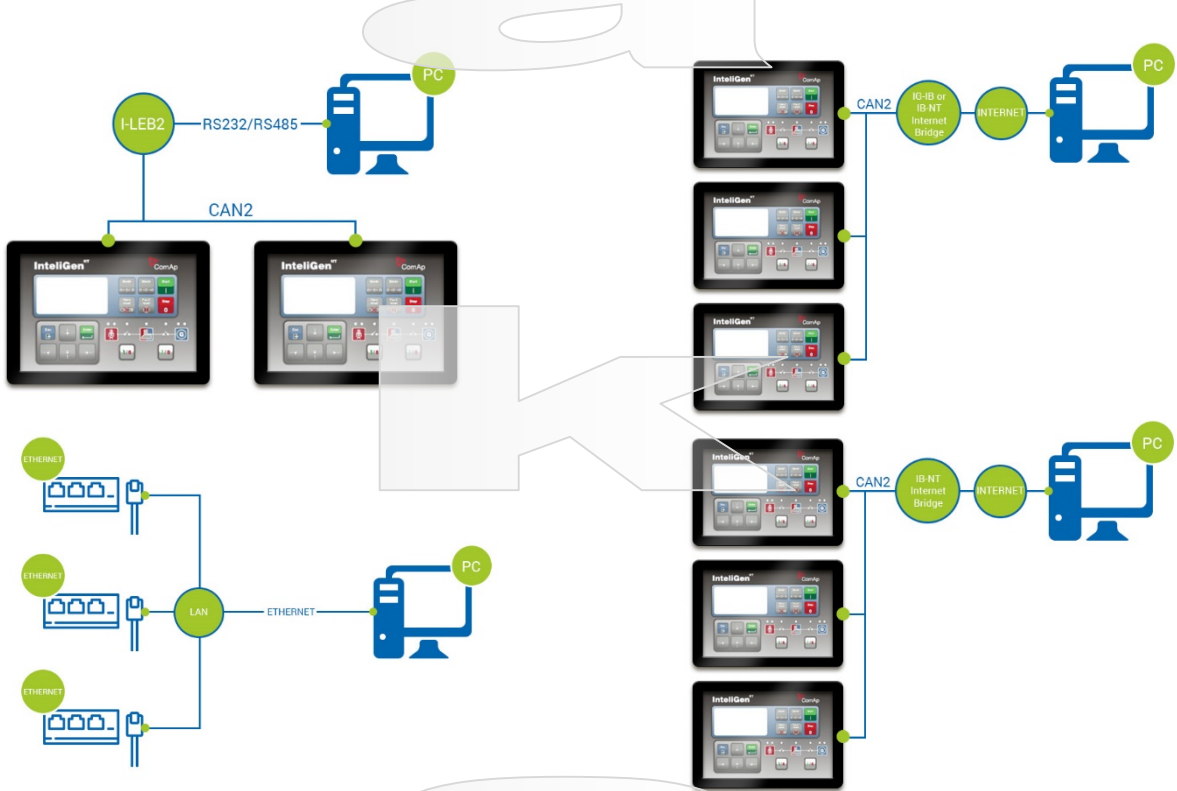


**Multiple Generator Monitoring**

- In this monitoring mode, single but multiple generators bought by the customer are monitored over regional map through special web software provided that the control module is convenient. (All parameters of generators can be accessed, parameters can be changed, generators can start/stop, they can be put in synchronicity and taken out)



- This is the process of the possibility of simultaneously monitoring the generators that feed the system in multiple synchronization on a single screen through Ethernet, GSM Modem or in cabled form up to 100 mt ( All parameters of generators can be accessed, parameters can be changed, generators can start/stop, they can be put in synchronicity and taken out)



- This is the system of monitoring the generators that feed the system in multiple synchronization through RS-485 protocol on an individual basis. (All parameters of generators can be accessed, parameters can be changed, generators can start/stop, they can be put in synchronicity and taken out)

