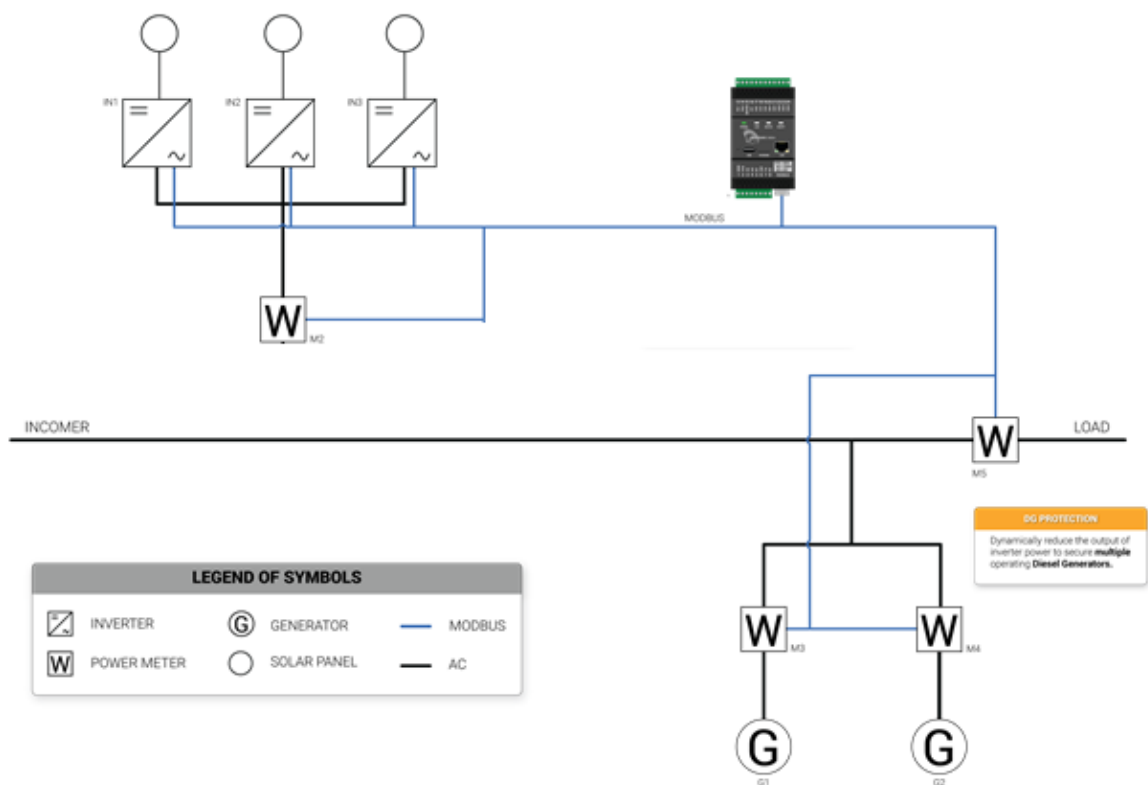


DG-Solar Synchronization

This solution ensures that the solar inverters generate the power as per the change in connected load in case of no grid. In other words, the total demanded load gets smartly distributed between Solar and DG in such way that the DG runs at the minimum possible load and solar will fulfill the remaining load demand. Because the solar power generation is being altered as per the load, the problem of damage to DG is automatically taken care off.

Broad Schema of Solution



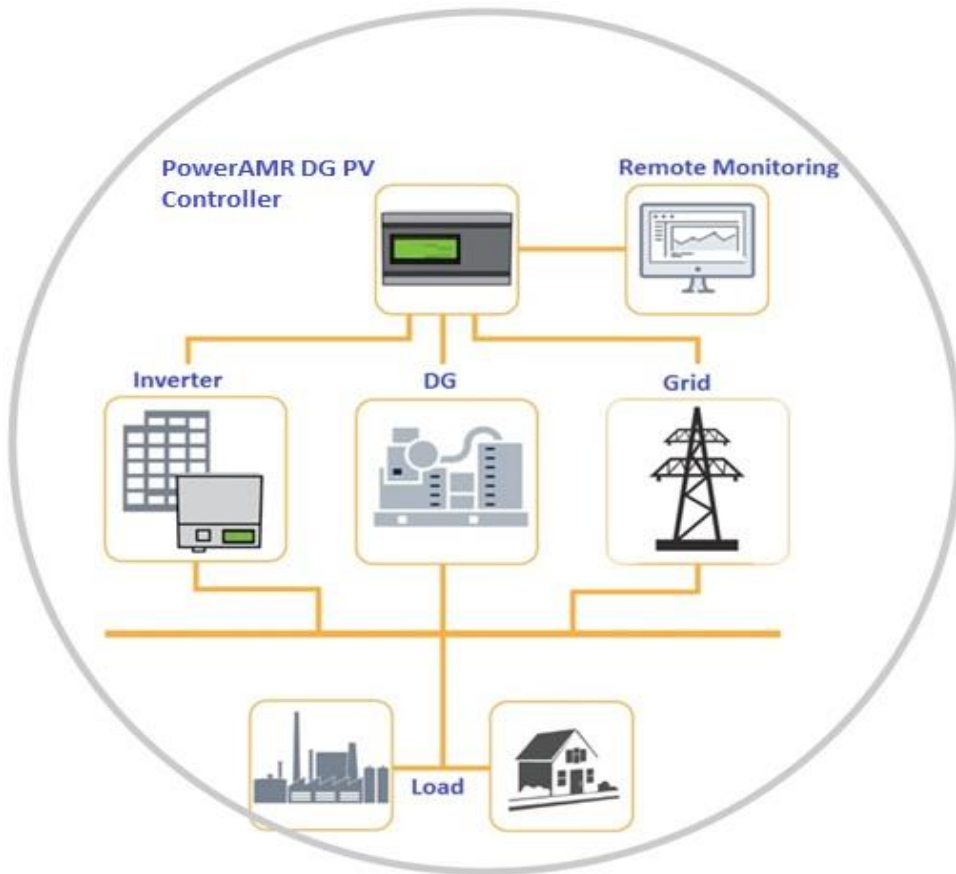
- ***In case of DG Synchronization, meter shall be installed at DG panel.***
It will be ensured that DG runs at 30% to 36% of its KW rating eg. DG will run in the range of 30 KW to 36 KW in case of 100 KW DG set.

The controller working principle is as per below-

The working principle is as follows-

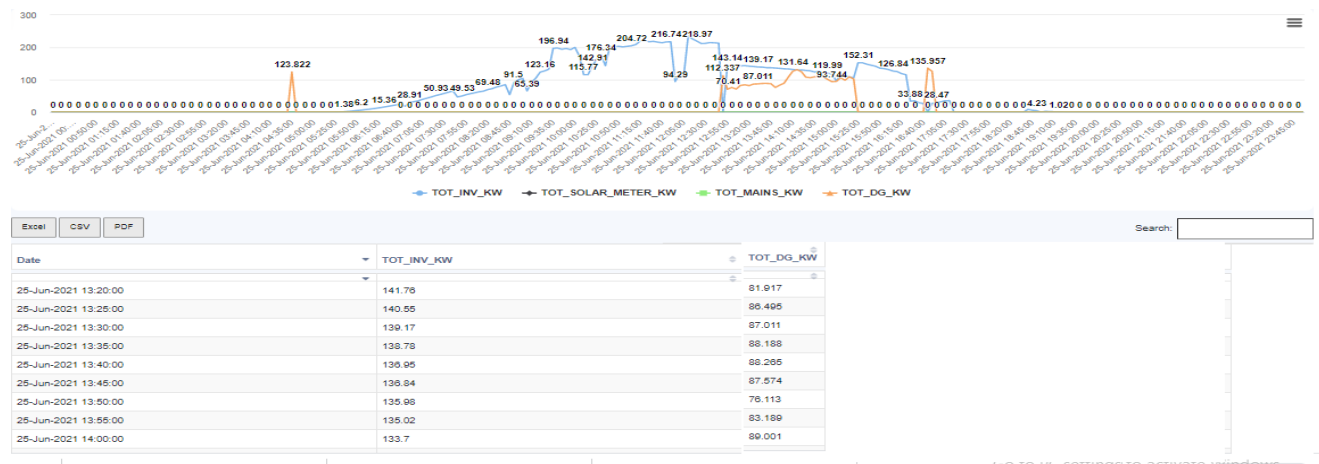
1. *Read Active Power from meter*
2. *Is Active power > Max Set point? If yes, increase power on inverters*
3. *Is Active power < Min Set point? If yes, decrease power on inverters*
4. *Repeat from step 1*

The general Block diagram of DG-Solar Synchronization is given below-



When we get off status from the grid and ON status from DG or DG'S, the DG sync controller will throttle power of each Inverter as per building load. It also divides user load between DG and solar smartly in such way that DG will run at minimum load and solar cater maximum part of user load. This will result in the minimum fuel consumption of DG along with reverse power protection and solar optimized.

Note- The same system can be used to switch off the inverter in case of DG on condition. In this case the controller senses the load on DG through the energy meter installed on the DG set and sends command to the solar inverter to switch off the solar generation.



Key Benefits

- **Smart Control:** The device provides real time power control and will ensure that the inverter ramps down the solar production, in case of low/ no load.
- **Flawless Protection:** Our System ensures that there is no reverse feed of power to DG and protects the inverters from over-frequency damage
- **Graphical representation:** Client can log on to the PowerAMR website and see working of power control on real time through the single line diagram and graphical illustration.
- **Remote Monitoring:** PowerAMR DG PV Controller simultaneously acts a Data Logger and provide real time and historical data monitoring on our Solar Management Platform
- **Deemed Generation:** The system estimates the amount of energy throttled due to impact of DG PV Controller at every 10 minute interval.

Basic Requirement:

Following information is required for configuration :

1. Inverter(s) and Energy Meter(s) make and model
2. Inverter(s) and Plant rating in kW
3. Grid Load in kW
4. Diesel Generator(s) Rating in kVA, and minimum load-output in kW
5. Total Load of Site, which equals Solar + Grid + DG

Compatible Devices

Inverters :

- ABB
- Chint Power
- Delta
- Evvo
- Fronious
- Goodwe
- Growatt
- Havells
- Huawei
- Hitachi
- INVT
- Kaco
- K Solare
- Kehua
- Kstar
- Luminous
- Polycab
- Powerone
- Ingeteam
- Refusol
- Saj
- Schneider
- SMA
- Sofar
- Solis
- Solax
- SolarEdge
- Sukam
- Sungrow
- Tmeic
- UTL
- Waaree
- Zever, and many more

Energy Meters :

- Archmeter PA330
- Eastron SDM630
- Elmeasure Little Genius & Tiny Master
- Klemsan KLEA 320P
- Legrand EMDX3
- L&T ER300P
- Schneider Conzerv EM6400
- Schneider PowerLogic EM7280
- Secure Elite 103, 307, 440-444, 440-445 & 440-440
- Sumeru Verde Damodar series

**** Addition of other inverters and energy meters based upon requirement**