

Project – Parallel operation of 3x1010 KVA KOHLER DG set by DEIF AGC 242 Power Management Controller.

Commissioning of AGC 242 for 3 x 1010 KVA KOHLER DG set.

Project : Avinash InfoTech -Hyderabad.
Customer : S G Engineering Pvt. Ltd –Mumbai.

Kohler (Mitsubishi) DG set of 3x1010 KVA supplied by Prime Power-Chennai.



Prime Mover (Make-Mitsubishi)



Alternator (Make – Marathon)

Engine make & Model : Mitsubishi & S12H-PTA4.

Alternator Make : Marathon Magnamax.

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Synchronization Panel Supplied by SG Engineering-Mumbai.



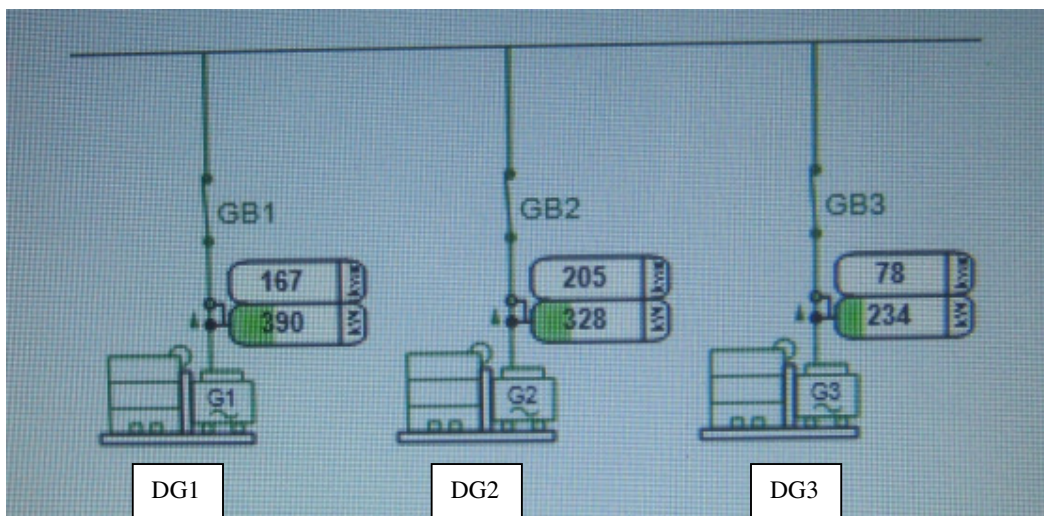
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AGC 242 is used for:

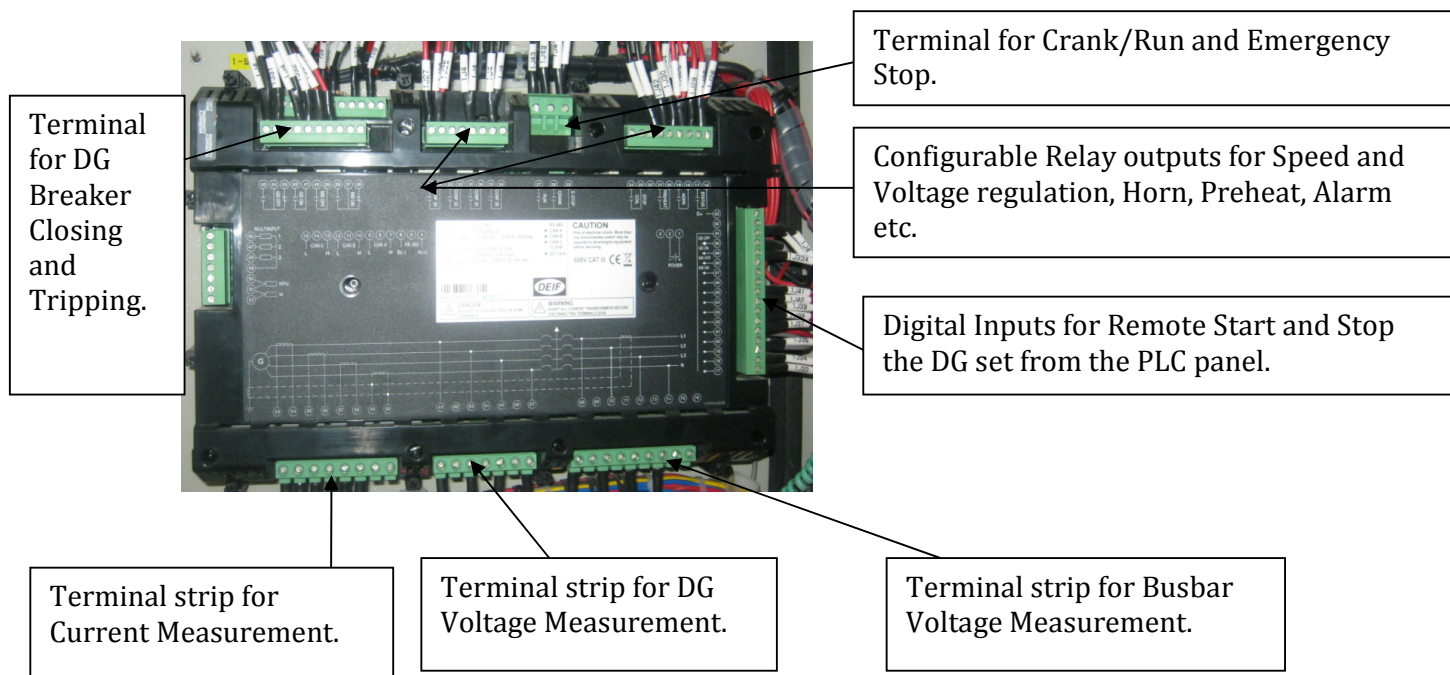
- Auto/Manual Starting of DG set in case of Grid Power Failure.
- Synchronization and Equal Load Sharing.
- Power Management Operation.
- Generator Protections.

Project Scheme: 3x1010 KVA Island DG set.



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AGC 242 Terminal Overview –



Crank Relay Coil : Not Used.

Run Relay Coil : Connected to DEC 5 Kohler controller as a continuous input to run the DG set.

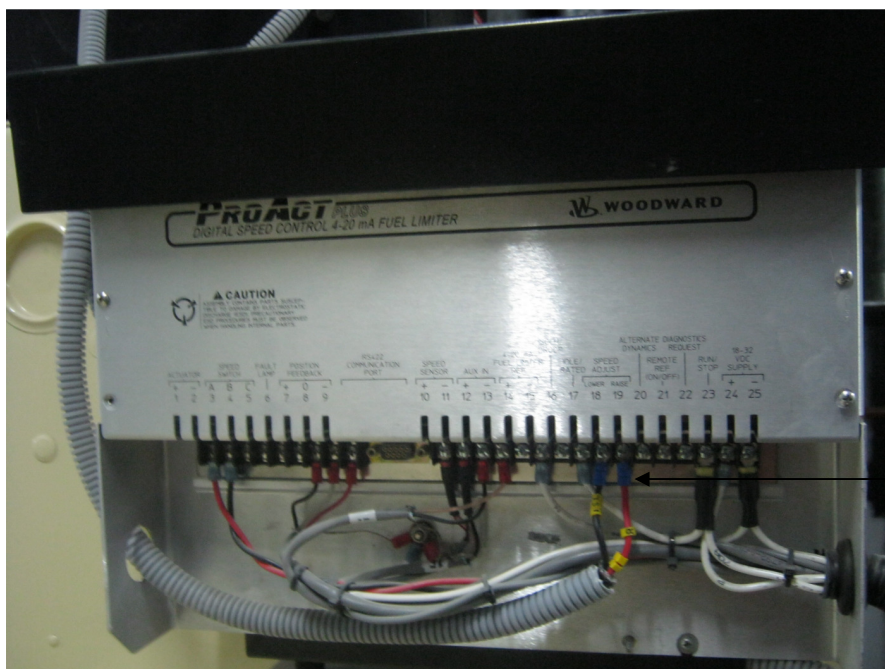
Configurable Output Relays : Connected to DEC 5 Kohler DG set for digital Speed Governing and voltage regulation.

Digital Input : Connected to AGC 242 for Auto Start/Stop incase Grid Power failure.

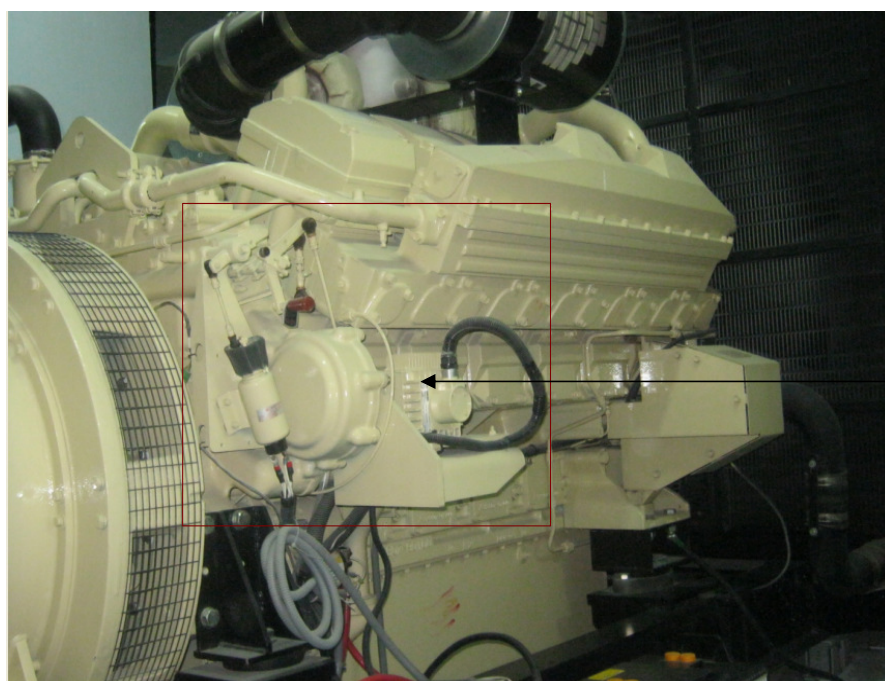
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Speed Governor Module:

Engine Speed Governor Model: Woodward Proact plus Digital speed control.



Relay outputs from AGC 242 connected to Woodward Governing card for Speed Regulation.



Location of Engine Speed Governor.

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Voltage Regulator Module:

DEC 5: DVR inbuilt in Kohler DEC controller.



**Relay outputs
fro AGC 242
connected to
DEC5 DVR for
Voltage
Regulation.**

Kohler DEC 5 Controller Function:

- For Starting the DG set.
- For Voltage Regulation.
- For Engine and Alternator Protections.

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Plant Operational Logic:

- In case of Mains Power Failure, the AGC 242 will get the digital input signal as an Auto Start/Stop from LVM.
- The entire DG sets will start at a time. The DG set will pick up the speed and voltage will close the respective breaker first and will be the Master DG set.
- The Slave DG set will close the respective breaker after the synchronization. AGC 242 will take the proper care of synchronization.
- After closing the all DG sets breakers, the Load dependant Stop logic will start for 120 sec. Suppose if the load is not more than 70% and less than 50% of rated, the remaining two DG sets breakers will get open and DG sets will get off after cool down time.
- If the load exceeds above the 70% of rated, the next DG set will start after 10 sec. time delay. The DG set will synchronize with the running DG set and will share the load.
- In case of Mains power restoration, the LVM will energize and will remove the Auto Start/Stop input.
- After removing the input, the running DG set will open the respective breakers and will get off after the cool down time.