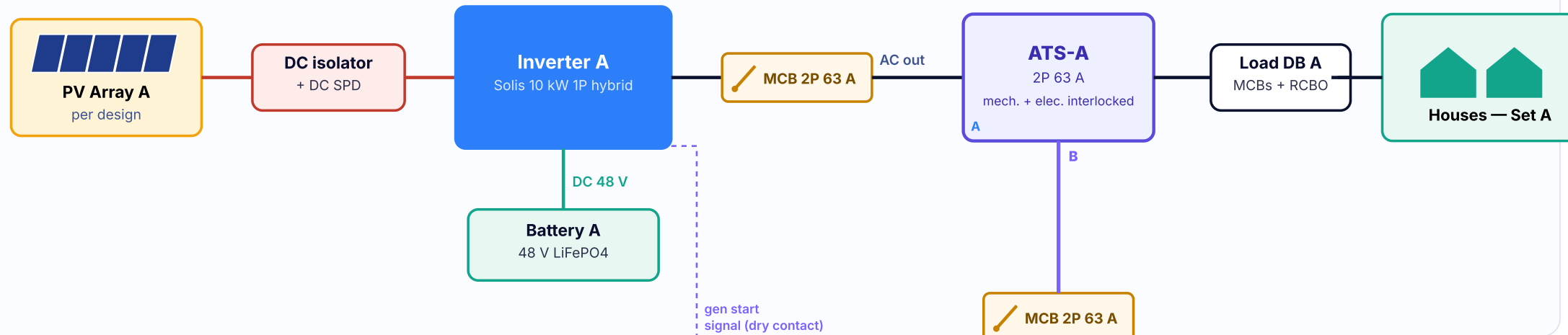


SINGLE-LINE DIAGRAM · OFF-GRID WITH GENERATOR BACKUP

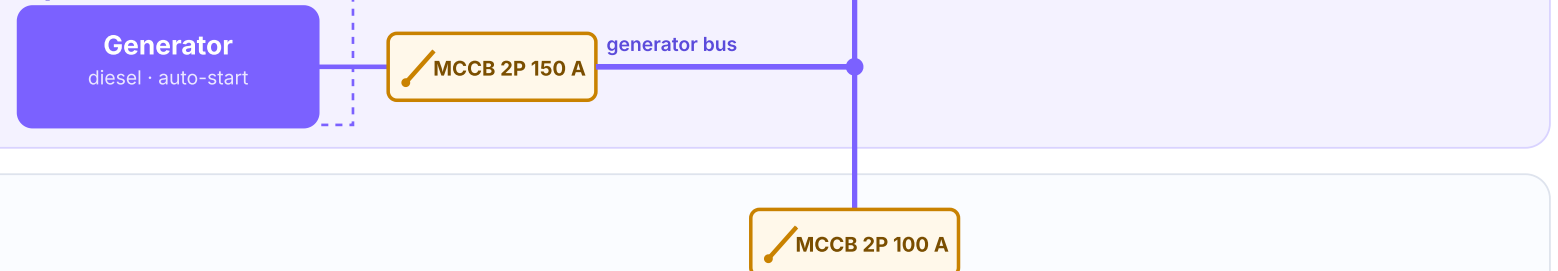
Solar Set A (1 × 10 kW) + Solar Set B (2 × 10 kW) · Generator to ATS Source B

SLD-20261020-01
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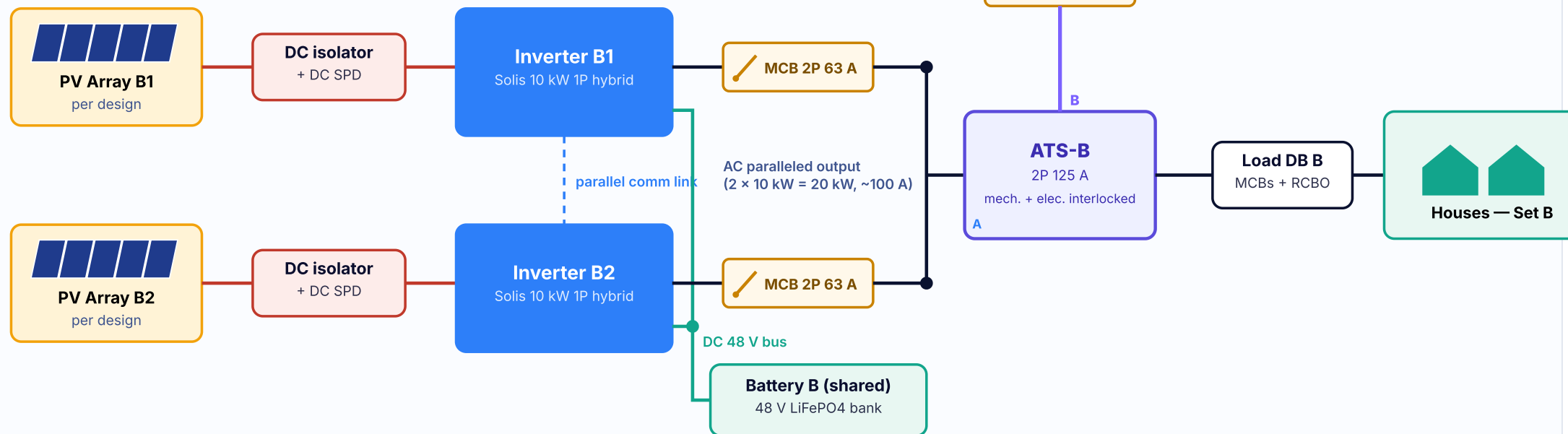
SOLAR SYSTEM SET A · 1 × 10 kW



GENERATOR BACKUP (feeds Source B of both ATS)



SOLAR SYSTEM SET B · 2 × 10 kW (parallel)



Legend

- DC (PV)
- DC (battery)
- AC from inverters
- AC from generator

How it operates

- Normal:** each solar set supplies its own houses through ATS source A.
- Inverter output off** (battery empty, fault or maintenance): the ATS senses loss of source A and, after a short delay, switches to source B.
- Generator** auto-starts on the inverter dry-contact / ATS signal and feeds Set A and Set B houses through their own ATS.
- Inverter back:** ATS returns to source A; generator cools down and stops.
- Interlock:** each ATS is mechanically and electrically interlocked, so the generator is never connected to an inverter AC output.
- Generator size:** ≥ 30 kVA 1-phase to carry both sets at once (or ~20 kVA with load shedding).
- Note:** in this layout the generator feeds loads only; it does not recharge the batteries. To charge batteries too, also wire it to the inverter GEN port.
- Ratings indicative** — final breaker, cable and ATS sizes per load calculation and site survey. Earth all frames, DBs and the generator to the main earth.