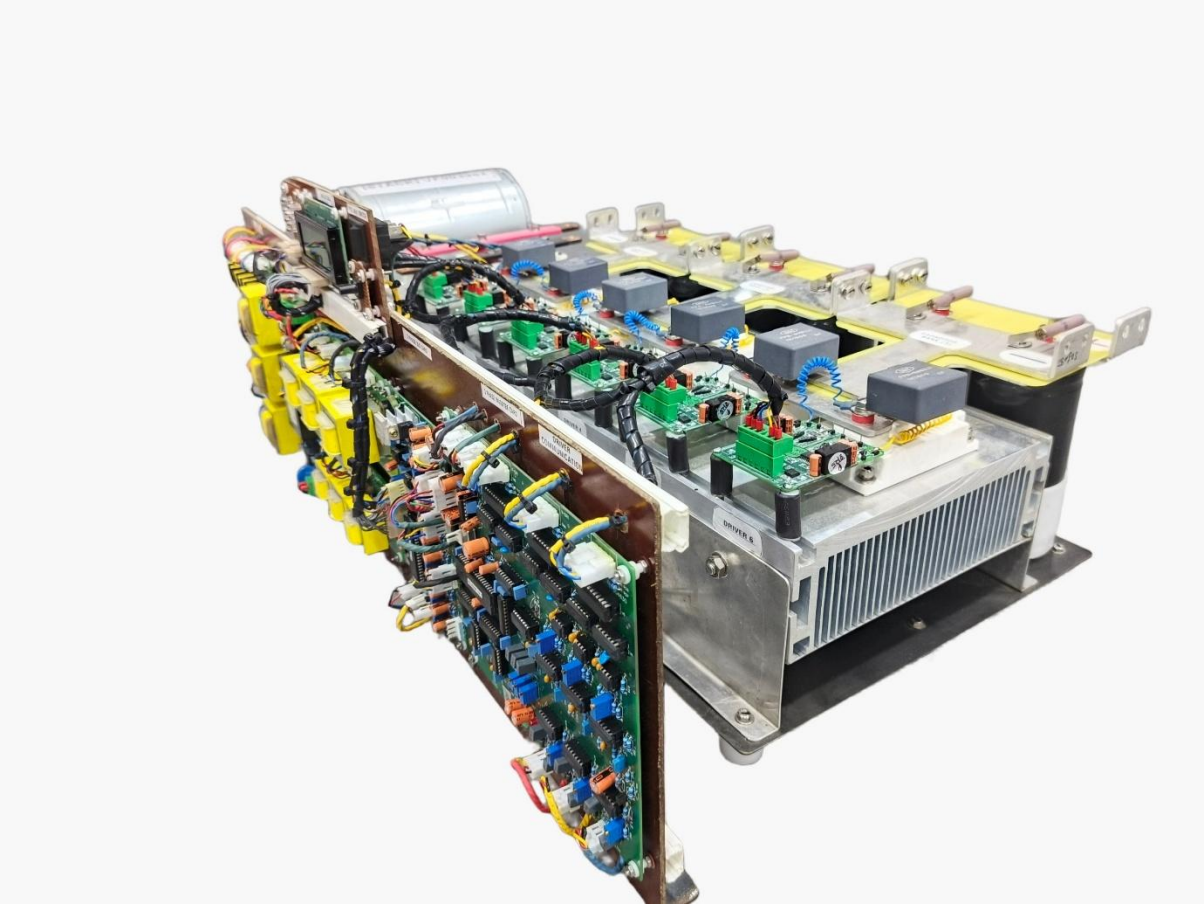
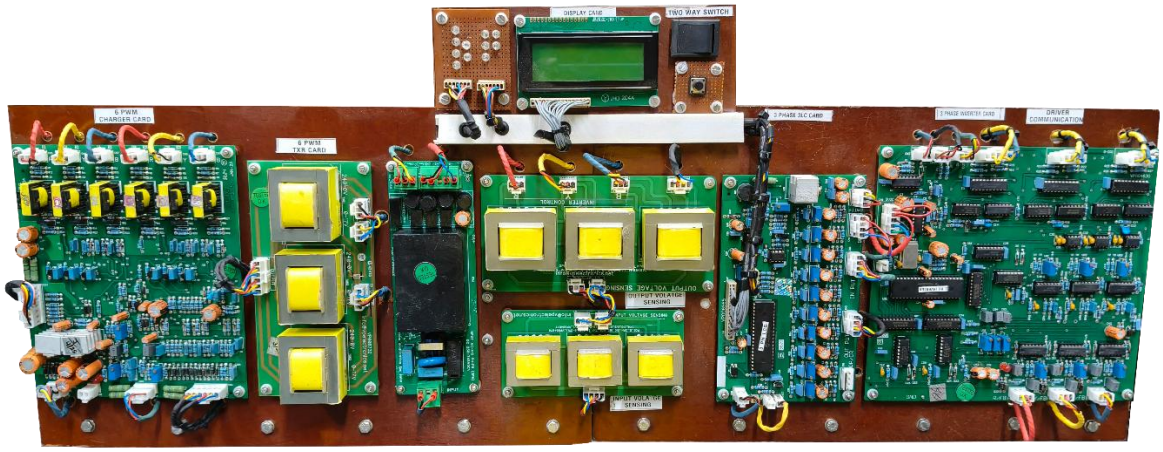
Bill of Material-60 KVA ONLINE UPS STACK -30 BATTERY 3IN-3OUT UNBALCE LOAD

WITH INVERTER & 6 PULSE CONTROL CARD





Overall System Specification

- **Product Designation:** 80 KVA Online UPS Stack
- **Configuration:** 3-Phase Input, 3-Phase Output (3IN-3OUT)
- **Key Features:**
    - Designed for unbalanced loads.
    - Includes an Inverter system.
    - Utilizes a 6-Pulse Control Card for the rectifier/charger.
    - Compatible with a 30-battery string.

Detailed Bill of Material (BoM) Specifications

The system is built around a main power stack and includes a full set of control accessories.

1. Main Power Stack Assembly: [VP003962] 6L_3P_INV_60K (STACK)

This is the core power conversion unit. The "6L" likely refers to a 6-level or 6-IGBT bridge inverter topology.

Component	VP Code	Description	Quantity	Key Specifications / Function
IGBT Power Module	[VP001171]	MMG300D120B6TC	6 Units	High-power IGBT module. Likely rated for 300A, 1200V. Forms the main switching core of the inverter.
Contactor	[VP005110]	SKKT 162/16E	3 Units	Heavy-duty 3-phase contactor, likely for output or bypass switching.

Component	VP Code	Description	Quantity	Key Specifications / Function
Cooling Blower	[VP002437]	BLOWER EBM NADI (D2E133-AM47-01)	1 Unit	Forced-air cooling for the heatsink and power components.
DC-Link Capacitor	[VP006983]	4700µF 450V DC KENDEIL (76X143)	6 Units	Smooths the DC bus voltage. 4700µF, 450V rating. Large can size (76x143mm).
DC Filter Capacitor	[VP004376]	1µF 1000V DC BOX DESAI (50gm)	6 Units	Snubber or high-frequency filtering capacitor across IGBTs.
Bleeder Resistor	[VP001275]	39K 11W Bleeder Resistance SR11J39K	6 Units	Safety resistor to discharge the DC-link capacitors when the UPS is off. 39 kΩ, 11 Watt.
Heatsink	[VP005727]	240X80X700MM AL HEATSINK	1 Unit	Large aluminum heatsink (240mm x 80mm x 700mm) for dissipating heat from the 6 IGBT modules.

2. Control & Accessory Set: [VP004133] FULL SET-3PH 6IGBT +6 PULSE CHARGER...

This is a comprehensive kit containing all the necessary electronic control cards and sensors for the stack.

Included Items	Function
Inverter Card	Controls the IGBTs to generate the precise AC output waveform.
Display Card	Interfaces with the user display/interface.
LCD	The physical Liquid Crystal Display unit.
High Cut Card	Protects the system from overvoltage conditions.
Multi Power Supply	Provides various DC voltages required by the control circuits.
6 Pulse Charger	The rectifier/charger unit that converts AC input to DC, using a 6-pulse thyristor/IGBT bridge.
Output Sensing Transformer PCB	Measures output voltage and current for regulation and protection.
Input Sensing Transformer PCB	Measures input voltage and current.
6 Pulse Sensing Transformer PCB	Monitors the 6-pulse charger circuit.
Shunt 200A	A precision resistor for high-current measurement (likely up to 200A).

3. Other Components

Component	VP Code	Description	Quantity
Harness/Wiring Loom	[VP004138]	HARDNESS - ONLINE UPS STACK NEW	1

Component	VP Code	Description	Quantity
DC-Link Capacitor (Duplicate)	[VP006983]	4700µF 450V DC KENDEIL (76X143)	6

Summary of Key Technical Highlights

- **Power Topology:** Utilizes a robust 6-IGBT module design for the inverter, capable of handling unbalanced 3-phase loads.
- **Charger Type:** Features a **6-Pulse Charger**, which is a standard, cost-effective design for this power range. (Note: A 12-pulse design is often used for better harmonic mitigation on the input side).
- **DC Bus:** A high-capacitance DC-link (10x 4700µF capacitors) ensures stable DC power for the inverter, especially during transients and power loss.
- **Cooling:** A dedicated high-performance blower and a large custom heatsink are used for thermal management of the high-power semiconductors.
- **Control System:** A fully digital control system is implied by the suite of specialized PCBs (Inverter, Sensing, Display cards) based on the UCC21750 gate driver IC.

This BoM describes a complete, industrial-grade 80 kVA Online UPS system designed for high reliability in demanding 3-phase environments.