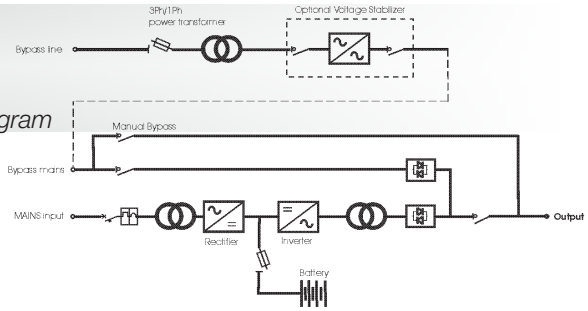
Digital static UPS unit 1Ph or 3Ph

Flex-Industry

DPS

Double rectifier 125 Vdc 1250A
Double inverter 125 Vdc 100KVA
Change over switchboard
installed in Hassi R Mell Solar Plant
(Algerian desert)

One line Diagram



Main features:

- Clean and stable DC on battery with ripple voltage peak-peak value <1%
- Pure VFI-SS-III output sinusoid wave as provided for by the IEC/CEI EN 62040 standards
- Redundant fan system with temperature and air flow control
- 5 automatic charging modes
- Manual charging mode for open cup batteries
- Adjustable times and alarm thresholds
- Temperature compensation programmable on the charging voltage to extend the battery life.
- Double digital microprocessor control (DSP + PLD) for rectifier and inverter, ensuring maximum reliability
- Full optical isolation on all the logic and interface cards.
- Modbus communication interface through RS232 or RS485 port.
- Ethernet connectivity.
- Optional FALCON battery control system.
- Separate DSP for rectifier and inverter to improve reliability.

High flexibility, allowing our equipment to adapt to all system features

The DPS is suitable for a wide range of applications in the most demanding industrial environments. It allows to achieve complex system architectures to ensure maximum power availability with a wide range of accessories and optional. We can supply redundant N+1 or HOT STANDBY configurations. Thanks to the new our DIGITAL TECHNOLOGY, you can choose different alarms with voltage-free contacts, with a wide range of LED indications and accurate digital measurements.

DSP board
with Modbus
communications

Furthermore a graphical display shows measurements, alarms and a one-line diagram to help the operator to better understand the situation. The digital inputs can be customised according to specific customer needs, allowing to take into account special system statuses and to display them on the monitor. The display can store the alarm list and an event history.

You can adapt the DPS to the technical specifications. Should you need any particular applications and customised solutions, please contact AUNILEC.

Absolute reliability and performance

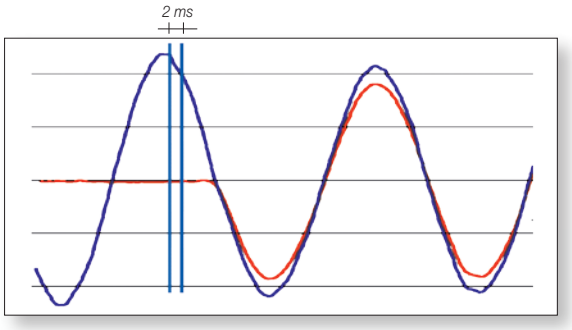
Touch screen display

To ensure its compatibility with the most demanding applications, the Aunilec DPS system can withstand a high short-circuit current, in order to guarantee the selectivity of the downstream protections. The fully DIGITAL microprocessor logic controls the power conversion, supervises operation, supports the system and modifies the parameters in case of component failure to assure power supply to the load.
If the load is highly distorted, the high frequency switching and the DPS loops support the system by keeping THD low. The Aunilec digital UPS units are fitted with a modern IGBT technology and a PWM modulation allowing to obtain a pure sinusoid output wave as required by the strictest standards contained in IEC EN 62040 class VFI-SS-III.

Ventilation may be redundant, allowing to keep a rated output load only using one half of the fans. The air flow sensors detect the ventilation drop and immediately trigger an alarm, allowing to replace the damaged fan.

Low consumption levels

Thanks to component sizing, the UPS systems can reach high efficiency levels even with low DC bus voltages.
The selectable Line Interactive mode may be used in stable environments to achieve very high efficiency levels (~98%) in case of inverter power supply failure, and when synchronised with the mains it can take on the load in less than 1ms.



The image above shows the curves of the actual inverter current (red) and of the UPS output voltage (blue) as load is switched during a mains failure in Line Interactive mode. The interval is minimal. If the UPS operates in ON LINE mode, there is no interval in case of mains failure.

DPS: AUNILEC UPS industrial systems

DPS provides maximum protection for all mission-critical industrial applications thanks to an exceptional mechanical and electrical design. The DPS operates from 10 to 200kVA and uses an ON-LINE double conversion technology (VFI) with an isolation transformer on the inverter output.

Power is constantly supplied to the load by the inverter with a filtered, stabilised and regulated sinusoid wave.

The EMI input and output filters considerably increase the load immunity from noise or temporary mains overcurrents.

The DPS may be supplied along with an optional control software and can be remotely controlled through a serial or Ethernet interface.

Battery management system: maximising life

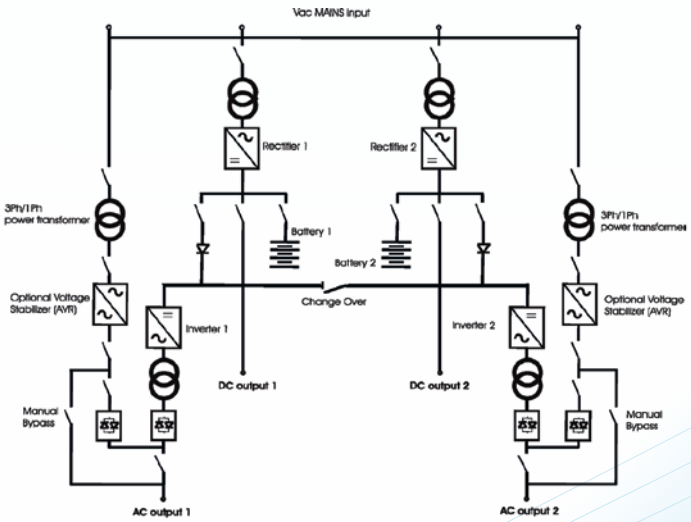
When the system is powered by the mains, the UPS recharges the batteries. In case of mains failure power is supplied to the inverter from the batteries. Efficient battery management, therefore, is essential for the UPS yield in case of emergency. Battery management consists of a set of features designed to ensure excellent yield and prolong the battery life:

- Double level charging, to optimise the charging currents and reduce the charging time.
- Four automatic charging modes, with different current management in compliance with the provisions set forth by the strictest standards.
- Programmable temperature compensation and discharge protection to reduce general battery ageing.
- Manual charging mode for the commissioning of any battery type.
- Intelligent and schedulable battery testing, for the identification of potential battery deterioration and failure.
- The voltage values, the times and the alarm thresholds can be programmed directly by the user through multilevel passwords.
- The UPS may be installed in any distribution system (the rectifier input neutral is not required).

The DPS is compatible with all battery types:

- Open cup acid lead
- AGM / GEL
- Ni-Cd batteries

UPS System integrated



Applications

· Oil & Gas/Petrochemical

· Utilities & Power stations

Reference standards
- IEC/CEI
- GOST/NEMA

Model	Voltage Battery	Output Voltage	Power
DPS TM 005/11	110Vdc	230Vac / 115Vac 1PH	5kVA
DPS TM 010/11	110Vdc		10kVA
DPS TM 015/11			15kVA
DPS TM 020/11			20kVA
DPS TM 030/11			30kVA
DPS TM 040/11			40kVA
DPS TM 050/11			50kVA
DPS TT 010/11	110Vdc	400Vac / 190Vac 3PH	10kVA
DPS TT 015/11			15kVA
DPS TT 020/11			20kVA
DPS TT 030/11			30kVA
DPS TT 040/11			40kVA
DPS TT 050/11			50kVA
DPS TM 005/22	220Vdc	230Vac / 115Vac 1PH	5kVA
DPS TM 010/22			10kVA
DPS TM 015/22			15kVA
DPS TM 020/22			20kVA
DPS TM 030/22			30kVA
DPS TM 040/22			40kVA
DPS TM 050/22			50kVA
DPS TM 060/22			60kVA
DPS TM 080/22			80kVA
DPS TM 100/22			100kVA
DPS TT 010/22	220Vdc	400Vac / 190Vac 3PH	10kVA
DPS TT 015/22			15kVA
DPS TT 020/22			20kVA
DPS TT 030/22			30kVA
DPS TT 040/22			40kVA
DPS TT 050/22			50kVA
DPS TT 060/22			60kVA
DPS TT 080/22			80kVA
DPS TT 100/22			100kVA

(Other size on request)

OTHER TECHNICAL CHARACTERISTICS

INPUT ELECTRIC PARAMETERS

Input frequency	50 / 60 Hz
Frequency range	±10%
Input voltage	400 Vac 3PH
Input voltage range	±10%
Input THD	27% with 6P, 12% with 12P, 6% with 12P + THD filter
Temperature compensation, 3 probes	0/-0,3V/°C
Ripple	<1%

OUTPUT ELECTRIC PARAMETERS

Overload 110/125/150%	2h/10'/10"
Output sinusoid distortion	<2% (VFI-SS-III class in compliance with the IEC/CEI EN 62040 standard)
Dynamic stability	-8%/+13% restoration to ±1% in 80ms
Static switch switching	<1ms

COMMUNICATIONS

Remote signalling	Voltage-free relays
Remote controls	ON/OFF switches, Manual charging, Temp. probes
Communication	Modbus protocol through RS485 DB9 serial port; TCP/IP

ENVIRONMENT

Cooling	Forced
Operating conditions	-5/+40°C, 93% Humidity (without condensation)
Noise	55 to 63 dB (depending on size)

MECHANICS

Metal frame thickness	2.5mm
Metal panel thickness	1.5mm
Frame surface	galvanised steel
Protection degree with closed panels	IP30
Protection degree with open panels	IP20
External colour	RAL 7035
Cable entry	from the base, from the roof or from the side

Main optional components

Additional RFI filters
Additional THD filters
12-pulse bridge
Battery control system:
Parallel configuration with active load distribution
Hot stand-by configuration
Special colours
Special protection degree
Output distribution panel