• INDUSTRY • • MEDICAL • • DATA CENTER • • TRANSPORT • • MALLS •

# DS POWER SH

## UNINTERRUPTIBLE POWER SUPPLIES

## 10-20kVA

### 3 PHASE IN / 3 PHASE OUT



- 3-LEVEL TECHNOLOGY
- IGBT RECTIFIER
- DSP CONTROL

TOWER | VFI TYPE — UPS ONLINE | 0.9 — POWER FACTOR | SERVICE / TECH. SUPPORT | ECO FRIENDLY

*DS Power SH Online UPS has emerged as an affordable alternative to the DS Power H model with its compact and small-footprint design. It stands out with its ergonomic design that occupies less space with the same power as the battery cabinet that can be positioned one above the other with the UPS. It features the latest DSP technology, which is programmed to suit a wide variety of electrical environments without impending performance. With the 3-Level topology, efficiency, reliability and functionality are elevated to levels unattainable with legacy analog technology. This technology does not only create significant increase in MTBF, but the capability of DSP to accurately process signals at very high speed permits all the UPS subsystems to be controlled with greatly increased precision.*

## GENERAL SPECIFICATIONS

- Small footprint
- Transformerless UPS topology
- 3 DSP controlled modular structure
- Separate main control board advantage for rectifier and inverter
- 3-Level technology and fully digital structure
- Less electronic components and SMD technology
- Low input current total harmonic distortion (THDi)
- High input power factor
- High efficiency up to 94%
- Selectable input/output voltage/frequency range
- Static and maintenance by-pass switch
- Optional 0.8 and 1.0 output power factor (PF) option
- Cold start function
- Compliant with IEC EN62040 directive
- Conforms to CE, TSE and GOST standards
- ISO9001, ISO14001 compliant production
- EMI/RFI input and output filter
- Advanced control at the input
- 3 level battery protection
- Temperature compensated charge system
- Output current limitation
- Output DC leakage protection
- Output short circuit and overload protection
- External REPO switch input
- 512 events memory (46.000 alarm)
- Clock and calender (battery supported)
- Automatic battery test, remaining battery time indicator
- 1 RS232 serial port and 3 dry contact outputs
- Optional SNMP, MODBUS and Remote Monitoring Panel
- Viewing device operating parameters
- Advanced remote control features
- User and central service passwords protected security
- 2 years warranty

# TECHNICAL SPECIFICATIONS

| MODEL | DS310SH | DS315SH | DS320SH |
|---|---|---|---|
| Power (kVA) | 10 | 15 | 20 |
| **INPUT** | | | |
| Voltage | 380/400 VAC 3P + N + G ± 20% | | |
| Frequency | 50Hz / 60Hz, ± 10% | | |
| Power factor (at 100% load) | ≥ 0.99 | | |
| THDI (at 100% load) | ≤ 4% (depends on mains input conditions) | | |
| By-pass voltage | 380/400 VAC 3P + N, 4 Wires, ± 10% | | |
| Protection | Fuses, Voltage & Frequency Tolerance | | |
| **OUTPUT** | | | |
| Power (kW) | 9 | 13.5 | 18 |
| Power factor (*) | 0.9 | | |
| Voltage | 380/400 VAC 3P + N, ± 1% | | |
| Frequency | 50Hz / 60Hz | | |
| Frequency tolerance | Line synchronized: ± 2% / Free running: ± 0.1% | | |
| Efficiency (at 100% load) | 94% | | |
| Crest factor | 3:1 | | |
| Overload protection (**) | 100% - 125% load: 10 min, 125% - 150% load: 1 min, - > 150% load: by pass | | |
| Protection | Fuses,Advanced short circuit, Voltage tolerance, DC balance, Regenerative load, Current limiting | | |
| Voltage THD | ≤ 2% (linear load), ≤ 5% (non-linear load) | | |
| **BATTERIES** | | | |
| Type | VRLA AGM / GEL / NiCd | | |
| Number of batteries | 60 (± 30) batteries | | |
| Float charging voltage | ± 405 VDC (adjustable) | | |
| End of discharge voltage | ± 300 VDC (adjustable) | | |
| Battery cabinet | External (attached cabinet at the bottom of UPS) | | |
| Batt. ambient temp. | 25°C | | |
| Battery protection | 3 level alarms, Battery fuses, Charging current limit, Temperature compensation (optional) | | |
| Automatic battery test | Standard: every 72 hours (adjustable) | | |
| **GENERAL** | | | |
| Standards | EN62040-1, EN62040-2, EN62040-3 | | |
| User interface | 4 lines LCD panel, Mimic leds, 5 vector buttons, buzzer | | |
| Indicators | P-N voltage, P-P voltage, Current, Power, Crest Factor, Frequency, PF, Service Time | | |
| Advanced | Self diagnostics, 3 maintenance time indicators, Calibration over RS232,operating hour meter | | |
| Communication | RS232 serial port, 3 programmable dry contact outputs | | |
| Inputs | EPO input | | |
| Genset kit | Standard (programmable) | | |
| Software | Standard T-Mon UPS Management Software (3 clients + 1 server management) | | |
| Alarm logging | Standard: with time & date 512 events | | |
| Protection | Power module over temperature, Over current, Temperature high alarms | | |
| Operating temperature | 0°C - 40°C | | |
| Protection degree | IP20 | | |
| Relative humidity | 90% max. (non-condensing) | | |
| Altitude | < 1000m. above sea level | | |
| Acoustic noise | < 55 dBA | < 57 dBA | |
| Weight (kg) | 47.5 | 49.5 | 51 |
| Dimensions (mm) HxWxD | 700x300x770 (without batt.) / 1170x300x800 (with 7-9ah batt.) | | |
| **OPTIONS** | | | |
| Different input / output voltage | Please ask | | |
| Adaptors | SNMP, MODBUS, RS485, Remote panel | | |
| Software | T-Mon Admin Multi UPS monitoring 10-50-100-200 clients, T-Mon Server 50-100-200 clients | | |

(*) Ask for 0.8 and 1.0 power factor.

(**) The waiting times for excessive loads vary depending on the ambient temperature.