



Digital Smart Sine Series

1- Introduction of Product

Faratel Digital Smart Sine UPS series are designed based on line-Interactive technology and can provide pure sine wave in output independent of input AC line even in power failure.

Faratel DSS series are equipped with smart micro-processing system to check for proper operation of UPS and find probable errors in any part of that.

DSS series are designed for Computer systems, medical devices, Telecommunication or any other power sensitive devices.

1-1- Advanced Features

Features	Benefits
High efficiency	<ul style="list-style-type: none"> ▶ Low power consumption ▶ Decreasing the cost ▶ Low thermal loss that increases the life time of UPS
Ability to remove EMI and RFI noises	<ul style="list-style-type: none"> ▶ Decrease common mode noises less than 50db ▶ Decrease the Frequency conflictions with other equipments ▶ Prevent losses in wires and UPS's loads
System modulated	Better and easy servicing
Equipped with intelligent microcontroller	AC conditions are monitoring precisely and by complex controlling-protecting algorithms the integral operating is certified.
<ul style="list-style-type: none"> ▶ Battery management ▶ Equipped with switching charger 	<p>Thanks to algorithms used in battery charging and discharging:</p> <ul style="list-style-type: none"> ▶ Battery lifetime is extended ▶ Current ripple is at its minimum level during the discharge period ▶ Automatically battery charging in UPS standby mode ▶ Cold start ▶ Includes test button for checking if UPS works properly in lack of AC line voltage ▶ Indicating battery level ▶ Equipped with external battery connector to prolong backup time ▶ Ability to detect battery cabinet modules to adjust charger current ▶ Ability to recognize battery disconnection

Features	Benefits
Equipped with smart RS232 and USB ports and ability to add UPS device managers as SNMP cards	<ul style="list-style-type: none"> ▶ Ability to interface with UPSwing Pro software for controlling and monitoring UPS, auto saving open files and shutdown OS and UPS in critical events ▶ Making report from different events ▶ Shut down all servers and saving all information even in critical situations
LCD indicator	<ul style="list-style-type: none"> ▶ User friendly ▶ Ability of monitoring different warnings and errors in text files ▶ Monitoring different input and output parameters ▶ Monitoring power consumption and battery level in all conditions ▶ Possibility of adjusting some parameters
Fan speed control	Energy saving, low acoustic noise, longer fan and device life
Temperature management	UPS measures the temperature of different internal parts and calculates semi-conductor junctions' temperature in order to protect device
IGBT technology	Compact design, small dimensions and low weight
Equipped with Smart reboot system	To detect incorrect operation of computers and restarts UPS in abnormal cases such as PC hanging or any error in Com port or USB ports
Works in frequency range of $\pm 3\text{Hz}$ or $\pm 5\text{Hz}$	Ability to work with generator

Features	Benefits
Line interactive technology	<ul style="list-style-type: none"> ▶ Very low transfer time (2~4ms) ▶ Wide input voltage range ▶ Automatic voltage regulation through two amplification steps and one attenuation step helps to prolong battery life time ▶ UPS output voltage is pure sine wave same as ideal mains source and UPS output total harmonic distortion is very low
Possibility of placing UPS on battery, on power rack or tower installation	<p>Optimum space usage according to customer demand:</p> <ul style="list-style-type: none"> ▶ Using in rack ▶ Tower installation ▶ Placing on battery cabinet
Overload time management	UPS continues its online operation for a certain period during overload condition and warns the user

1-2- Protection Systems

- Lightning, spike and surge protection (Only in the case of using standard Earth)
- Back feed protection on battery mode
- Protection of UPS loads against two phased AC line
- Protection against out of range output voltage variations
- Protection against Input voltage and frequency variations
- Over heat protection
- Common mode noise protection (Only in the case of using standard Earth)
- Output short circuit and overload protection
- Reversed battery connection protection
- Charger short circuit protection
- Battery terminal short circuit protection
- Protection against over discharge
- Protection against out of range battery charger's over voltage
- Tel/Fax/Modem/Network surge suppression

2- UPS Block Diagram

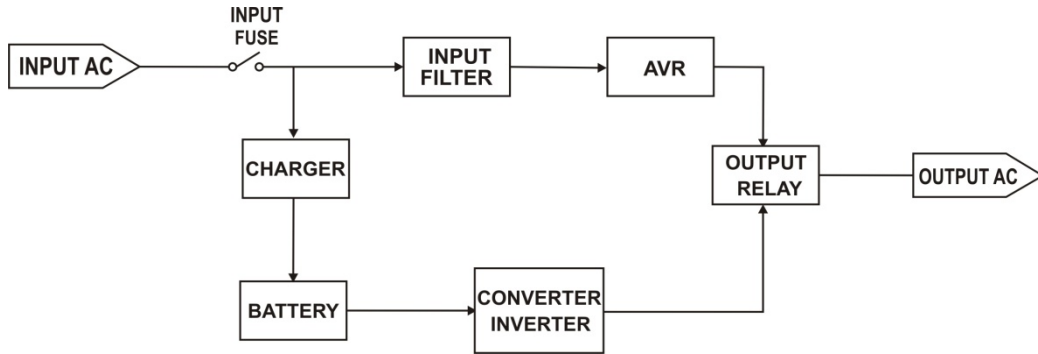


Figure 1: Block Diagram of DSS1500 and DSS2000

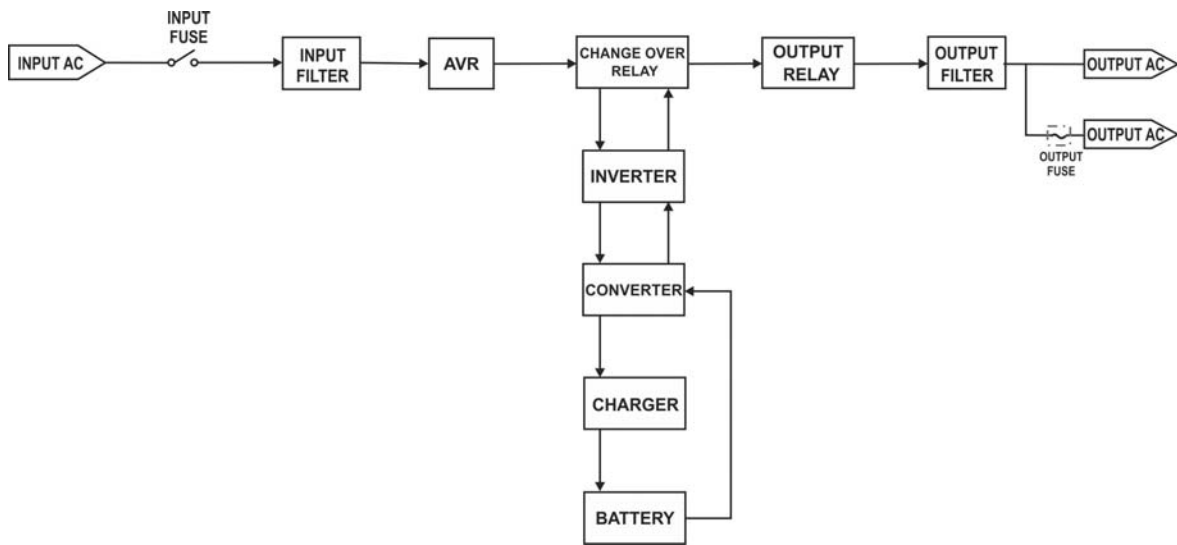


Figure 2: Block Diagram of DSS3000

3- Front Panel View

- ① ON/Test Button
- ② OFF Button
- ③ Fault Indicator
- ④ Inverter Indicator
- ⑤ Line Indicator
- ⑥ Scroll Down Button
- ⑦ Select Button
- ⑧ Scroll Up Button
- ⑨ LCD Display

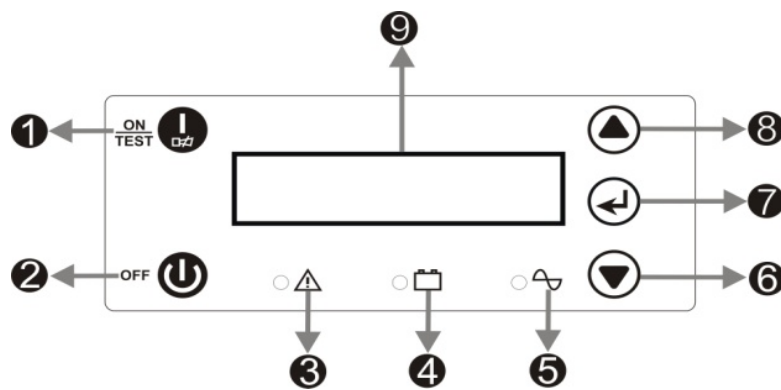


Figure 3: Front Panel of Rack-Mount DSS Series

4- Rear Panel View

- ① Input AC line Cable
- ② Input Fuse
- ③ Output Receptacles
- ④ Output Plug
- ⑤ Fuse for IEC320
- ⑥ External Battery Connector
- ⑦ Intelligent Card Slot (Optional)
- ⑧ Fan
- ⑨ Input and Output Connectors RJ45/11
- ⑩ Smart RS-232 Port, USB
- ⑪ Earth Terminal

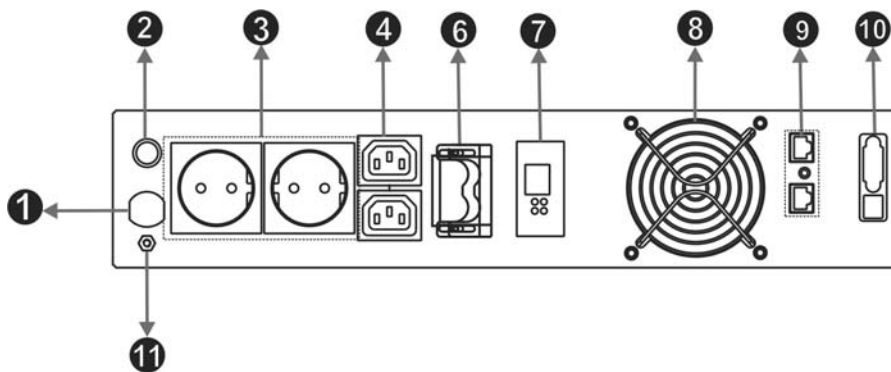


Figure 4: Rear Panel of DSS1500 and DSS2000

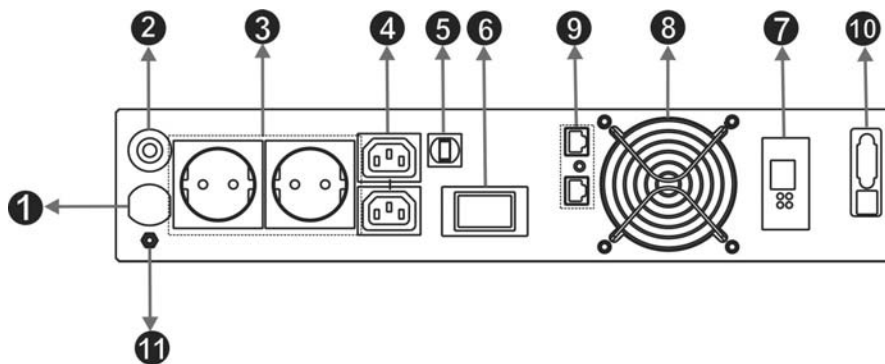


Figure 5: Rear Panel of DSS3000

5- Technical Specification Table

Model		DSS1500X-RT	DSS2000X-RT	DSS3000X-RT
Technology		Line-interactive		
Nominal power		1500VA-1500Watt	2000VA-2000Watt	3000VA-3000Watt
Nominal voltage		220		
Input	Voltage	70%LOAD(150~170 VAC), 100%LOAD(170~270 VAC)		
	Max. current	10A	13A	20A
	Frequency	50±3Hz or ±5Hz		
	Phase	Single phase		
Output	Voltage	AC	220±10%VAC	
		Battery	220±1%VAC	
	Current	6.8A	9.09A	13.63A
	Frequency	In AC mode: synch with input In battery mode: 50±0.01Hz		
	Phase	Single phase		
	Nominal power factor	1		
	THD	At non-linear load <5%	At non-linear load <6%	At non-linear load <5%
	Overload capacity	105%~125% of nominal power for 10 Seconds		
	Battery	Type	Sealed lead acid batteries with free maintenance	
Voltage		48VDC		96VDC
Internal battery		Has not		
Recharge time		10 hours after full discharge		
External battery		Equipped with external battery connector		
Efficiency		In normal mode: >95%		
Transfer time		2-4msec		
Environment	Audible noise		at 1 meter from surface: <40db	
	Ambient operation	Temperature	0~40°C	
		Humidity	0~95% (Non-condensing)	
		Altitude	1000 Meters max. elevation (Based on IEC 62040)	

6- Physical Specification Table

Model	Dimension [W*D*H] (mm)	Weight (Kg)	
		Net weight (Kg)	Shipping weight (Kg)
DSS1500X-RT	Net dimension: 440*512*88 Shipping dimension: 530*620*205 With handle: 483*542*90	12.6	15.1
DSS2000X-RT		14.1	16.6
DSS3000X-RT		14.7	17.2

7- How to Contact Faratel

7-1- Central Sales Department

Address: Faratel Bldg., No. 21, Kandovan Alley (Opposite of Nejatolahi St.), Enqelab St., Tehran, Iran

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Fax: (+98 21) 6670 9493

Email: sales@faratel.com

URL: <http://www.faratel.com>

7-2- Central Customer Service

Address: Faratel, Shahid Abdolrahimi St., 17 Shahrivar St., Sanay-e Felezi St., Fifth Kilometer of Old Karaj Rd., Tehran, Iran

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Telephone: (+98 21) 6680 9495 up to 7

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In order to find the nearest authorized representatives of Customer Service in Iran please refer to the above URL.