

# TELCOM INVERTER

## DATE SHEET FOR TELCOM INVERTER 1-10KVA

### PART 1: INTRODUCTION

Dedicated sine wave inverter is especially designed and produced for the enterprises in electrical power system and post and telecommunication industries according to their actual requirements under the condition of not only considering the spatial installation size and the automation and networking requirements for the inverter management in IT age, but also considering the influence of the noise on the personnel in offices or in machine rooms.

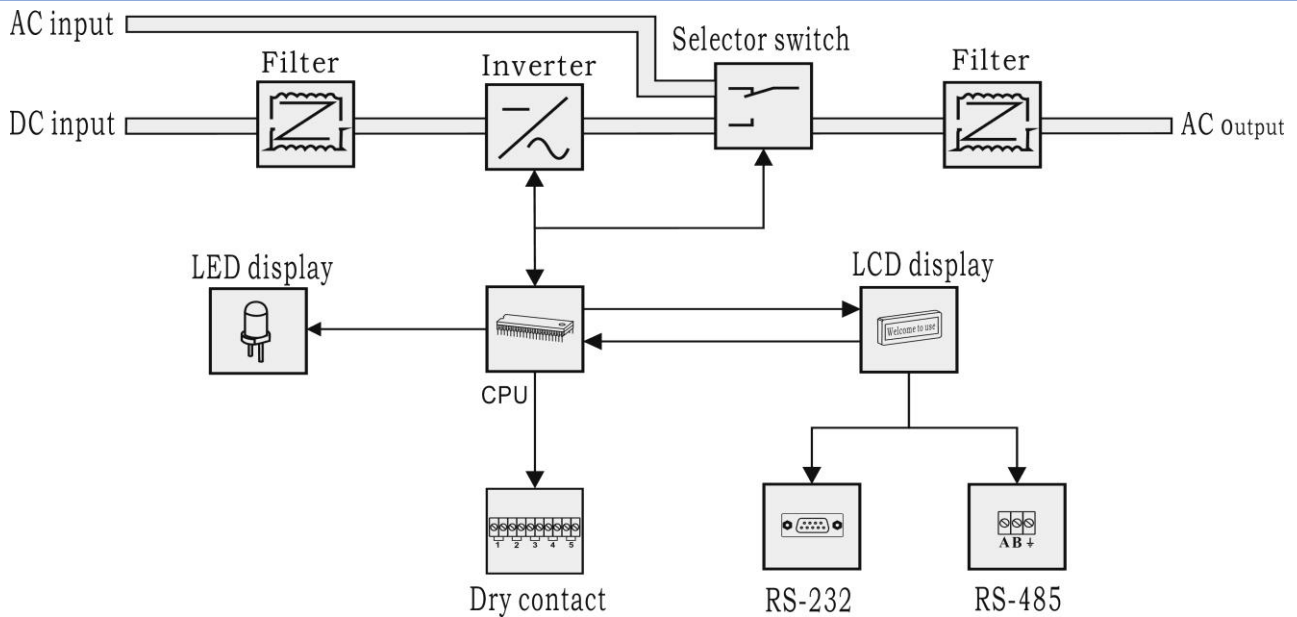
The inverter of this series employs advanced SPWM and CPU control technology to realize precise control, isolated input and output, output soft start, safety and high efficiency, good reliability and strong impact resistance to inductive load. Not only with small volume, light weight, beautiful appearance, convenient installation and maintenance, simple operation, low noise, low backward noise and no pollution, but also with the function of real-time data collection and multi-path remote communication, the products of this series can provide convenience for many system users to implement network management and remote control. Meanwhile, such inverter is not only applicable to communication industry, but also applicable to other occasions with high requirements for power supply quality, thus becoming the ideal selection of the power supply for office automation.

### PART 2: FUNCTIONS AND FEATURES

- This product has perfect safety protection functions, such as DC input inverse connection prevention and DC input buffering protection and other comprehensive protection measures for overvoltage, overload, short circuit, over-temperature and inverter fault.
- Due to the adoption of the advanced backward noise suppression techniques, this product does not mutually intervene with the communication equipment sharing the DC cabinet. The AC input terminal employs multiple filtering to eliminate the interference of the utility power grid in order to meet the requirements of the application system for AC-dominated power supply.
- This product can flexibly set AC-dominated power supply and DC-dominated power supply (such power supply form can be switched through LCD panel or communication background software):
  1. When there is mains, AC-dominated inverter power supply is under mains output mode; in case of mains fault, AC inverter power supply automatically switches to inverter output.
  2. DC-dominated inverter power supply is under inverter output mode during normal operation, and automatically switches to mains by-pass output during the occurrence of DC input fault.
- This product also has the function of LED+LCD status display, alarm signal display and alarm recording, and is provided with 128\*64 lattice screen as the perfect humanized man-machine interface with blue background and white subtitles.
- This product has 5 groups of passive dry contacts respectively for DC input fault, AC input fault, overload information, by-pass information and output fault.
- This product is also provided with completely independent RS232 and RS485 communication interfaces, and supports real-time data communication function, and can use the monitoring software to monitor and control the working condition of the inverter power supply in a real-time manner.
- This product supports built-in TCP/IP communication to realize remote network monitoring and management of the inverter power supply. **(Optional)**
- This product supports built-in SNMP communication to realize the interconnecting function of the inverter power supply and attain the objective of network monitoring and management. **(Optional)**

# TELCOM INVERTER

## PART 3: WORKING SCHEMATIC



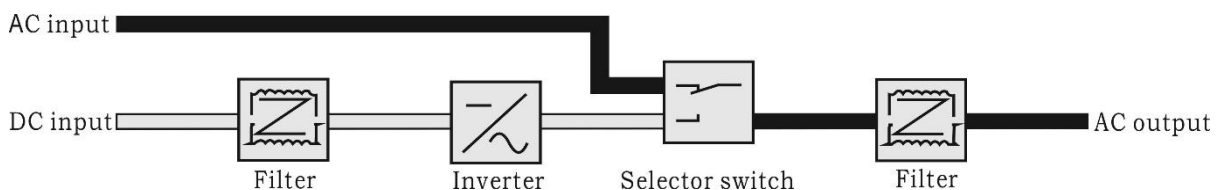
## PART 4: WORKING MODE

Item	Working mode	Definition
1	Pure DC Input for main power	Pure DC input, when the dc power off. the DC power inverter shut down to stop working;
2	DC priority and AC Bypass input	AC and DC Power input together , the dc power priority and AC for back up , when dc power off , it can switch to ac power in auto
3	AC priority and DC Bypass input	AC and DC Power input together , the AC power priority and DC for back up , when AC power off , it can switch to ac power in auto

**Noted: Inverter working mode with 3 option (1/2/3). Buyer should be confirm the working mode before production**

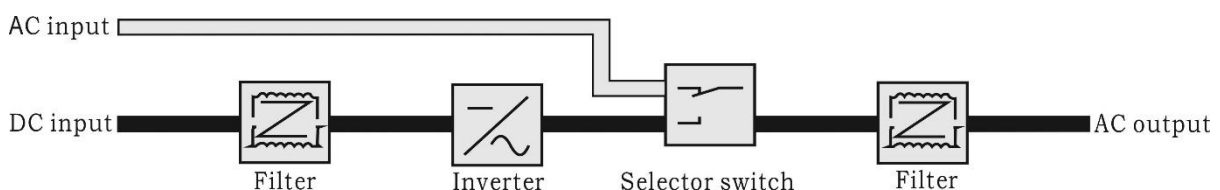
### ● AC priority and DC Bypass input

In the AC mains bypass mode, the mains power is switched to the output via a relay, and the mains bypass directly supplies power. When the main fails, it automatically switches to the inverter and is powered by the battery or DC to ensure uninterrupted power supply to the equipment.



### ● DC priority and AC Bypass input

In the inverter mode, after the DC boost inverter is reversed, it is switched to the output via a relay and directly powered by the battery or DC. When the inverter fails, it automatically switches to the bypass and is powered by the mains to ensure the uninterrupted power supply of the equipment.



# TELCOM INVERTER

## PART 5 TECHNICAL CHARACTERISTICS AND PARAMETERS

### TYPE 1: 48VDC TO 220VAC/120VAC SERIES

Brand	TONESPREAD POWER							
Model TS-DSAXXX-YYY	1000-48	2000-48	3000-48	4000-48	5000-48	6000-48	8000-48	10000-48
<b>DC Input</b>								
Rate input Voltage/VDC	48Vdc							
Rate input Current/A	21A	42A	63A	83A	105A	125A	167A	185A
Input dc range Voltage	DC shut down voltage : $\leq 40V$ ; $\geq 60V$ DC start up voltage range : 46V~57V							
Reverse noise Current	$\leq 10\%$							
<b>AC Bypass input</b>								
Allow bypass voltage (VAC)	120Vac $\pm 20\%$ or 220Vac $\pm 20\%$							
Rate input current/A	4.5A	9.1A	13.6A	18.2A	22.7A	27.3A	36.4A	40A
Bypass conversion time/MS	$\leq 5ms$							
<b>AC Output</b>								
Rated output Capacity/KVA	1KVA	2KVA	3KVA	4KA	5KVA	6KVA	8KVA	10KVA
Rated output power/W	800W	1600W	2400W	3200W	4000W	4800W	6400W	7000W
Rated output voltage and frequency	120/ 220Vac, 50Hz/60HZ							
Rate output current/A	3.6A	7.2A	10.8A	14.5A	18.1A	21.8A	29A	31.8A
Output voltage accuracy/V	220Vac $\pm 1.5\%$							
Output frequency accuracy/Hz	50hz $\pm 0.1\%$ /60hz $\pm 0.1\%$							
Waveform distortion rate (THD)	$\leq 3\%$ ( Linear load )							
Dynamic Response	5% ( Load 25% $\longleftrightarrow$ 100% )							
Power Factor/PF	0.8							0.7
Over load ability	100%-120% 60 seconds 121%-150% 10 seconds							
Efficiency	$\geq 85\%$ ( 80% Resistive load )							
Bypass conversion time/MS	$\leq 5ms$							
<b>Operating Environment</b>								
Insulation strength (input and output)	1500Vac, 1min							
Noise/1m	$\leq 40dB$							
Operating temperature	-25°C~+50°C							
Humidity	0~90% , no cooling							
Altitude /m	$\leq 1000M$							
<b>Protection</b>								
Protect function	Input lower voltage, input overvoltage protection; output overload protection, output short circuit protection							
Product Dimension/mm	482*347*88mm			482*430*88mm			482*480*176mm	
Product Net Weight/kg	9kg	10kg	10kg	12kg	13kg	13kg	20kg	22kg
Package Dimension/mm	580*520*240mm			590*590*240mm			590*570*420 mm	
Gross Weight/kg	11kg	11kg	11kg	13kg	14kg	15kg	30kg	.30kg

# TELCOM INVERTER

## TYPE 2: 110VDC TO 220VAC/120VAC SERIES

Brand	TONESPREAD POWER							
Model TS-DSAXXX-YYY	1000-110	2000-110	3000-110	4000-110	5000-110	6000-110	8000-110	10000-110
<b>DC Input</b>								
Rate input Voltage/VDC	110Vdc							
Rate input Current/A	9A	18A	27A	36A	45A	55A	73A	91A
Input dc range Voltage	DC shut down voltage: $\leq 90V$ ; $\geq 135V$ DC start up voltage range : 104V--131V							
Reverse noise Current	$\leq 10\%$							
<b>AC Bypass input</b>								
Allow bypass voltage (VAC)	120Vac $\pm 20\%$ or 220Vac $\pm 20\%$							
Rate input current/A	.5A	9.1A	13.6A	18.2A	22.7A	27.3A	36.4A	45.4A
Bypass conversion time/MS	$\leq 5ms$							
<b>AC Output</b>								
Rated output Capacity/KVA	1KVA	2KVA	3KVA	4KA	5KVA	6KVA	8KVA	10KVA
Rated output power/W	800W	1600W	2400W	3200W	4000W	4800W	6400W	8000W
Rated output voltage and frequency	120/ 220Vac, 50Hz/60HZ							
Rate output current/A	3.6A	7.2A	10.8A	14.5A	18.1A	21.8A	29A	31.8A
Output voltage accuracy/V	220Vac $\pm 1.5\%$							
Output frequency accuracy/Hz	50hz $\pm 0.1\%$ /60hz $\pm 0.1\%$							
Waveform distortion rate (THD)	$\leq 3\%$ ( Linear load )							
Dynamic Response	5% ( Load 25% $\longleftrightarrow$ 100% )							
Power Factor/PF	0.8							
Over load ability	100%-120% 60 seconds 121%-150% 10 seconds							
Efficiency	$\geq 85\%$ ( 80% Resistive load )							
Bypass conversion time/MS	$\leq 5ms$							
<b>Operating Environment</b>								
Insulation strength (input and output)	1500Vac, 1min							
Noise/1m	$\leq 40dB$							
Operating temperature	$-25^{\circ}C \sim +50^{\circ}C$							
Humidity	0~90% , no cooling							
Altitude /m	$\leq 1000M$							
<b>Protection</b>								
Protect function	Input lower voltage, input overvoltage protection; output overload protection, output short circuit protection							
Product Dimension/mm	482*347*88mm			482*430*88mm			482*480*176mm	
Product Net Weight/kg	9kg	10kg	10kg	12kg	13kg	13kg	20kg	22kg
Package Dimension/mm	580*520*240mm			590*590*240mm			590*570*420 mm	
Gross Weight/kg	11kg	11kg	11kg	13kg	14kg	15kg	30kg	.30kg

# TELCOM INVERTER

## TYPE 3: 125VDC TO 220VAC/120VAC SERIES

Brand	TONESPREAD POWER							
Model TS-DSAXXX-YYY	1000-125	2000-125	3000-125	4000-125	5000-125	6000-125	8000-125	10000-125
<b>DC Input</b>								
Rate input Voltage/VDC	125Vdc							
Rate input Current/A	9A	18A	27A	36A	45A	55A	73A	91A
Input dc range Voltage	DC shut down voltage: $\leq 105V$ ; $\geq 150V$ DC start up voltage range : 119V--146V							
Reverse noise Current	$\leq 10\%$							
<b>AC Bypass input</b>								
Allow bypass voltage (VAC)	120Vac $\pm 20\%$ or 220Vac $\pm 20\%$							
Rate input current/A	.5A	9.1A	13.6A	18.2A	22.7A	27.3A	36.4A	45.4A
Bypass conversion time/MS	$\leq 5ms$							
<b>AC Output</b>								
Rated output Capacity/KVA	1KVA	2KVA	3KVA	4KA	5KVA	6KVA	8KVA	10KVA
Rated output power/W	800W	1600W	2400W	3200W	4000W	4800W	6400W	8000W
Rated output voltage and frequency	120/ 220Vac, 50Hz/60HZ							
Rate output current/A	3.6A	7.2A	10.8A	14.5A	18.1A	21.8A	29A	31.8A
Output voltage accuracy/V	220Vac $\pm 1.5\%$							
Output frequency accuracy/Hz	50hz $\pm 0.1\%$ /60hz $\pm 0.1\%$							
Waveform distortion rate (THD)	$\leq 3\%$ ( Linear load )							
Dynamic Response	5% ( Load 25% $\longleftrightarrow$ 100% )							
Power Factor/PF	0.8							
Over load ability	100%-120% 60 seconds 121%-150% 10 seconds							
Efficiency	$\geq 85\%$ ( 80% Resistive load )							
Bypass conversion time/MS	$\leq 5ms$							
<b>Operating Environment</b>								
Insulation strength (input and output)	1500Vac, 1min							
Noise/1m	$\leq 40dB$							
Operating temperature	$-25^{\circ}C \sim +50^{\circ}C$							
Humidity	0~90% , no cooling							
Altitude /m	$\leq 1000M$							
<b>Protection</b>								
Protect function	Input lower voltage, input overvoltage protection; output overload protection, output short circuit protection							
Product Dimension/mm	482*347*88mm			482*430*88mm			482*480*176mm	
Product Net Weight/kg	9kg	10kg	10kg	12kg	13kg	13kg	20kg	22kg
Package Dimension/mm	580*520*240mm			590*590*240mm			590*570*420 mm	
Gross Weight/kg	11kg	11kg	11kg	13kg	14kg	15kg	30kg	.30kg

# TELCOM INVERTER

## TYPE 4: 220VDC TO 220VAC/120VAC SERIES

Brand	TONESPREAD POWER							
Model TS-DSAXXX-YYY	1000-220	2000-220	3000-220	4000-220	5000-220	6000-220	8000-220	10000-220
<b>DC Input</b>								
Rate input Voltage/VDC	220Vdc							
Rate input Current/A	5A	9A	14A	18A	23A	27A	37A	46A
Input dc range Voltage	DC shut down voltage range : $\leq 180V$ ; $\geq 270V$ DC start up voltage range : 208V--260V							
Reverse noise Current	$\leq 10\%$							
<b>AC Bypass input</b>								
Allow bypass voltage (VAC)	120Vac $\pm 20\%$ or 220Vac $\pm 20\%$							
Rate input current/A	4.5A	9.1A	13.6A	18.2A	22.7A	27.3A	36.4A	45.4A
Bypass conversion time/MS	$\leq 5ms$							
<b>AC Output</b>								
Rated output Capacity/KVA	1KVA	2KVA	3KVA	4KA	5KVA	6KVA	8KVA	10KVA
Rated output power/W	800W	1600W	2400W	3200W	4000W	4800W	6400W	8000W
Rated output voltage and frequency	120/ 220Vac, 50Hz/60HZ							
Rate output current/A	3.6A	7.2A	10.8A	14.5A	18.1A	21.8A	29A	36.3A
Output voltage accuracy/V	220Vac $\pm 1.5\%$							
Output frequency accuracy/Hz	50hz $\pm 0.1\%$ /60hz $\pm 0.1\%$							
Waveform distortion rate (THD)	$\leq 3\%$ ( Linear load )							
Dynamic Response	5% ( Load 25% $\longleftrightarrow$ 100% )							
Power Factor/PF	0.8							
Over load ability	100%-120% 60 seconds 121%-150% 10 seconds							
Efficiency	$\geq 85\%$ ( 80% Resistive load )							
Bypass conversion time/MS	$\leq 5ms$							
<b>Operating Environment</b>								
Insulation strength (input and output)	1500Vac, 1min							
Noise/1m	$\leq 40dB$							
Operating temperature	$-25^{\circ}C \sim +50^{\circ}C$							
Humidity	0~90% , no cooling							
Altitude /m	$\leq 1000M$							
<b>Protection</b>								
Protect function	Input lower voltage, input overvoltage protection; output overload protection, output short circuit protection							
Product Dimension/mm	482*347*88mm			482*430*88mm			482*480*176mm	
Product Net Weight/kg	9kg	10kg	10kg	12kg	13kg	13kg	20kg	22kg
Package Dimension/mm	580*520*240mm			590*590*240mm			590*570*420 mm	
Gross Weight/kg	11kg	11kg	11kg	13kg	14kg	15kg	30kg	.30kg



# TELCOM INVERTER

## PART 6 ORDER LIST FOR 220VAC OUTPUT DESIGN

Model	DC Main Input	AC bypass Input	AC Output & Frequency	Capacity	Noted
<b>48VDC to 220VAC 1-8KVA</b>					
TS-DSA1000-48	48VDC	AC220V ±10%	AC220V 50Hz/60hz	1KVA	2U/19inch 482*347*88(mm)
TS-DSA2000-48				2KVA	
TS-DSA3000-48				3KVA	
TS-DSA4000-48				4KVA	2U/19inch 482*430*88(mm)
TS-DSA5000-48				5KVA	
TS-DSA6000-48				6KVA	
TS-DSA8000-48				8KVA	4U/19inch 482*480*176(mm)
<b>110VDC to 220VAC 1-8KVA</b>					
TS-DSA1000-110	110VDC	AC220V ±10%	AC220V 50Hz/60hz	1KVA	2U/19inch 482*347*88(mm)
TS-DSA2000-110				2KVA	
TS-DSA3000-110				3KVA	
TS-DSA4000-110				4KVA	2U/19inch 482*430*88(mm)
TS-DSA5000-110				5KVA	
TS-DSA 6000-110				6KVA	
TS-DSA 8000-110				8KVA	4U/19inch 482*480*176(mm)
<b>220VDC to 220VAC 1-10KVA</b>					
TS-DSA1000-220	220VDC	AC220V ±10%	AC220V 50Hz/60hz	1KVA	2U/19inch 482*347*88(mm)
TS-DSA2000-220				2KVA	
TS-DSA3000-220				3KVA	
TS-DSA4000-220				4KVA	2U/19inch 482*430*88(mm)
TS-DSA5000-220				5KVA	
TS-DSA6000-220				6KVA	
TS-DSA8000-220				8KVA	4U/19inch 482*480*176(mm)
TS-DSA10000-220				10KVA	
<b>24VDC to 220VAC 1-5KVA</b>					
TS-DSA1000-24	24VDC	AC220V ±10%	AC220V 50Hz/60hz	1KVA	2U/19inch 482*347*88(mm)
TS-DSA2000-24				2KVA	
TS-DSA3000-24				3KVA	
TS-DSA4000-24				4KVA	2U/19inch 482*430*88(mm)
TS-DSA5000-24				5KVA	

# TELCOM INVERTER

PART 7 ORDER LIST FOR 120VAC OUTPUT DESIGN					
Model	DC Main Input	AC bypass Input	AC Output & Frequency	Capacity	Noted
<b>24VDC To 120VAC (1-5KVA)</b>					
TS-DSA1000-24	24VDC	110Vac/220Vac	110vac/ 120vac 50hz 60hz	1KVA	19Inch 2U
TS-DSA2000-24				2KVA	482*347*88(mm)
TS-DSA3000-24				3KVA	19Inch 2U 482*430*88(mm)
TS-DSA4000-24				4KVA	19Inch 4U
TS-DSA5000-24				5KVA	482*480*176(mm)
<b>48VDC to 120Vac (1-6KVA)</b>					
TS-DSA1000-48	48VDC	110Vac/220Vac	110vac/ 120vac 50hz 60hz	1KVA	19Inch 2U
TS-DSA2000-48				2KVA	482*347*88(mm)
TS-DSA3000-48				3KVA	19Inch 2U
TS-DSA4000-48				4KVA	482*430*88(mm)
TS-DSA5000-48				5KVA	19Inch 4U
TS-DSA6000-48				6KVA	482*480*176(mm)
<b>110VDC to 120Vac (1-6KVA)</b>					
TS-DSA1000-110	110VDC	110Vac/220Vac	110vac/ 120vac 50hz 60hz	1KVA	19Inch 2U
TS-DSA2000-110				2KVA	562*492*195(mm)
TS-DSA3000-110				3KVA	19Inch 2U
TS-DSA4000-110				4KVA	575*562*195(mm)
TS-DSA5000-110				5KVA	19Inch 4U
TS-DSA6000-110				6KVA	590*570*420(mm)

## PART 8. CUSTOMIZE RANGE

Regard as the pure sine wave inverter for telecom, we can customize below range

### 220VAC OUTPUT DESIGN

- Input 24vdc, output 220vac, 1-5KVA
- Input 48vdc, output 220vac, 1-6KVA, 8KVA, 10KVA
- Input 110vdc, output 220vac, 1-6KVA, 8KVA, 10KVA
- Input 220vdc, output 220vac, 1-6KVA, 8KVA, 10KVA

### 120VAC OUTPUT DESIGN

- Input 24vdc, output 120vac, 1-5KVA
- Input 48vdc, output 120vac, 1-6KVA
- Input 110vdc, output 120vac, 1-6KVA

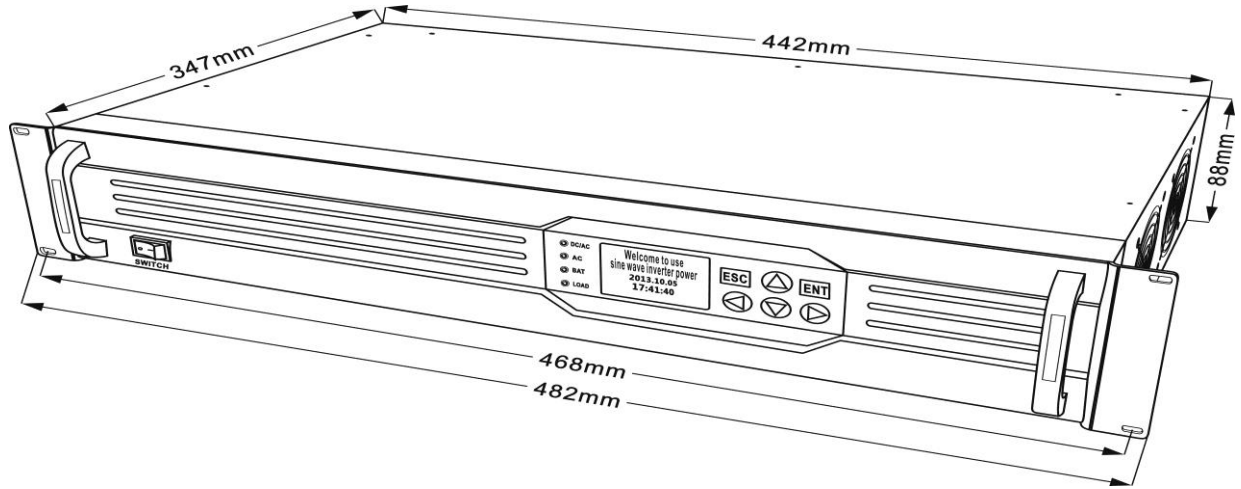
All design 19Inch 2U/4U Rack Mount, with LCD+LED Display, with RS232 Communication port, power Factor 0.8



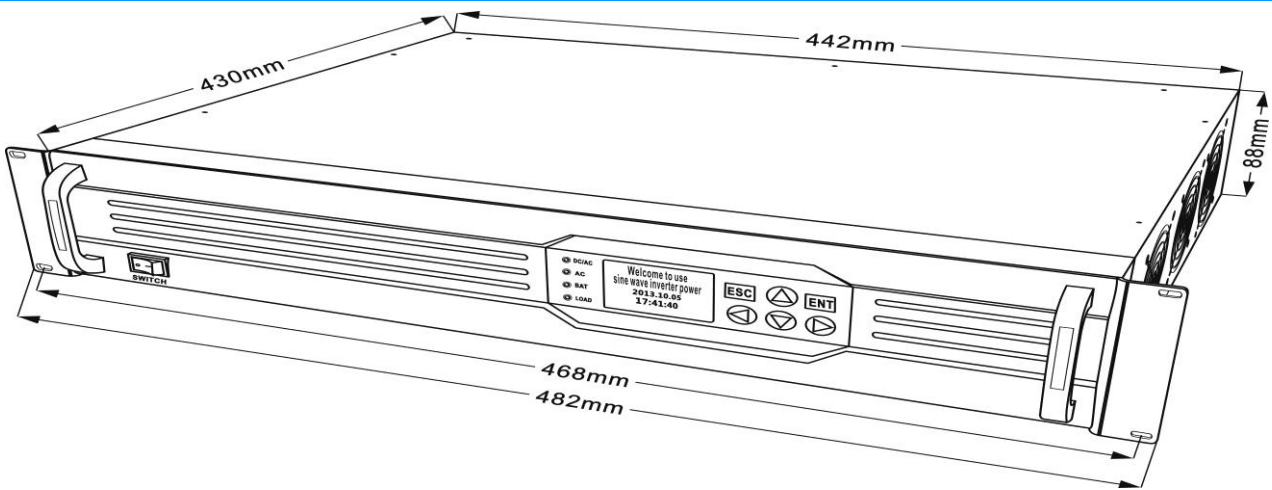
# TELCOM INVERTER

## PART 9. Dimension

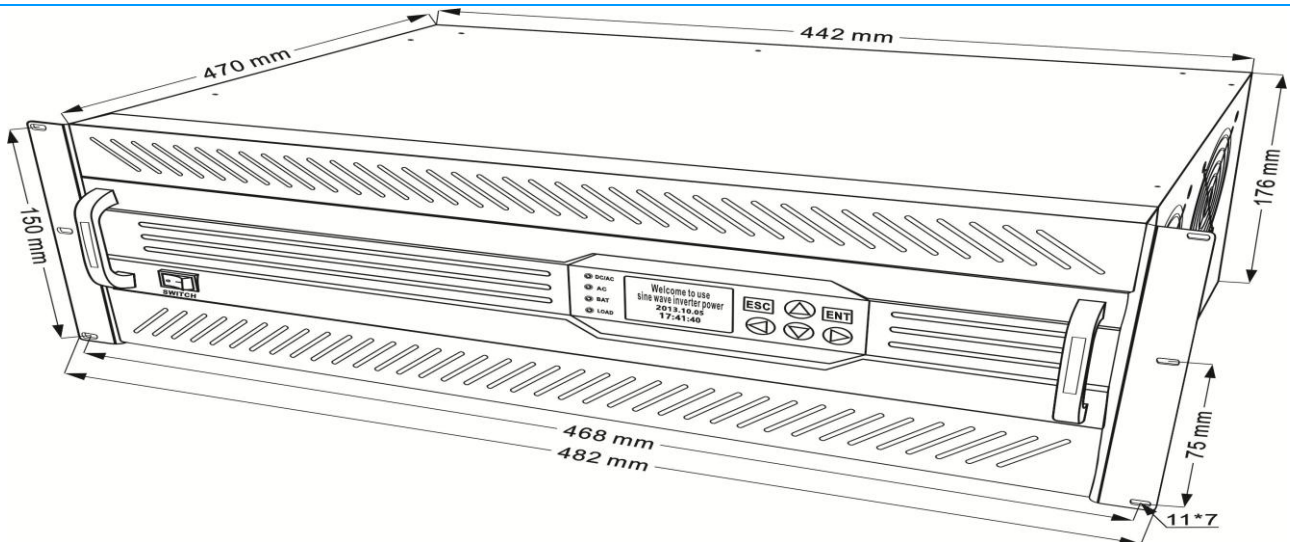
1-3KVA (482\*88\*347MM)



4-6KVA (482\*88\*430MM)



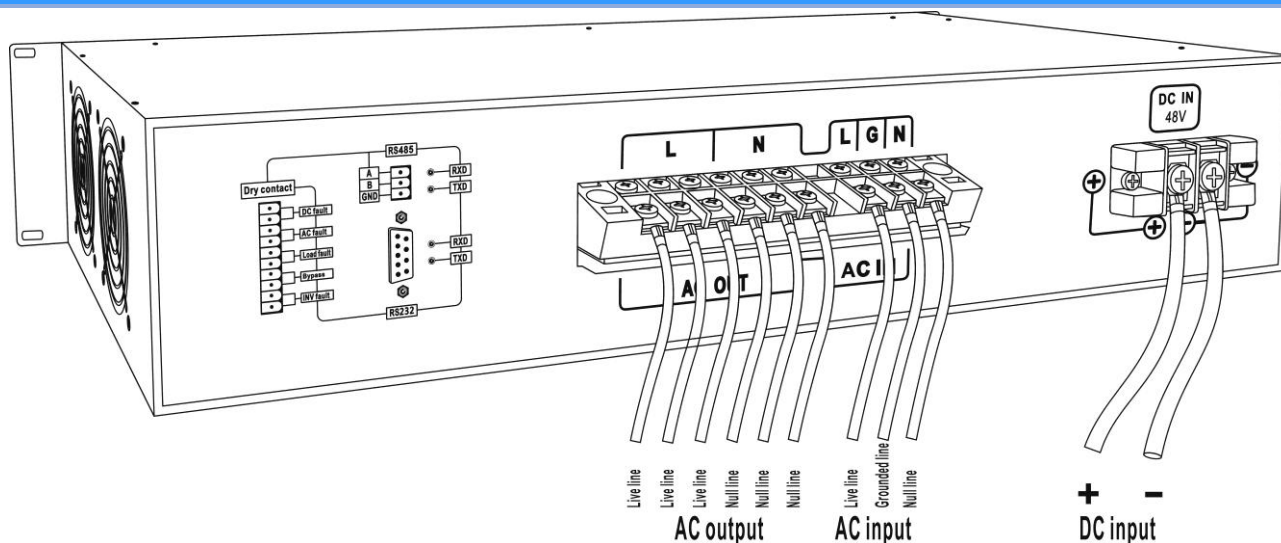
8-10KVA (482\*176\*470MM)





# TELCOM INVERTER

## PART 10. Rear View introduction



Pin 2 - RS232 TX wire  
 Pin 3 - RS232 RX wire  
 Pin 5 - RS232 GND wire  
 RXD - light is turned on for data receiving  
 TXD - light is turned on for data transmitting  
**RS232**

Pin 1 - RS485 A wire  
 Pin 2 - RS485 B wire  
 Pin 3 - RS485 GND wire  
 RXD - light is turned on for data receiving  
 TXD - light is turned on for data transmitting  
**RS485**

Signal 1 - DC fault; signal circuit is closed for low or high DC input voltage  
 Signal 2 - AC fault; signal circuit is closed for low or high AC input voltage  
 Signal 3 - overload signal; signal circuit is closed for equipment output overload  
 Signal 4 - by-pass signal; signal circuit is closed for equipment in by-pass operation  
 Signal 5 - output fault; signal circuit is closed for equipment output fault  
**Dry contact**

# TELCOM INVERTER

## PART 11. REFERENCE PICTURE

19inch 2U Rack Mount Front and Rear View -1/2/3/4/5/6KVA Design



19inch 4U Rack Mount (Front View)—8KVA & 10KVA



19inch 4U Rack Mount (Rear View)—8KVA & 10KVA

