

## AC series

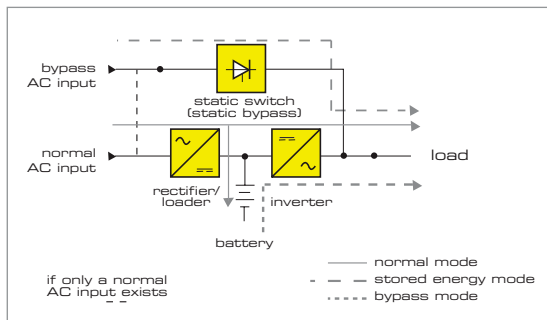
The outdoor UPS, is an intelligent UPS with a sine wave output, With high efficiency and reliability, it provides reliable and high quality AC power to your sensitive equipment.

The outdoor UPS is design for outdoor used. It is an ideal product for applications that require small footprint, like communication stations, data machine room, and so on.

Well-designed: with dust-proof, waterproof, heat insulation, anti-theft, moisture, mildew, and anti-corrosion and other functions, applicable in harsh outdoor environmental conditions in remote areas, very well environmental adaptation ability.

Professional design installation structure: X integration cabinet can be installed on the ground. Installation operation and maintenance is convenience, superior performance, safety and reliability.

### Operating principle



The UPS comprises: AC input, input filter (EMI and Class C SPD) , inverter, bypass, Charger External batteries and UPS output modules

The UPS uses MCU and IGBT (insulated gate bipolar transistor) to ensure satisfactory performance and increase the product reliability.

**AC input:** contains AC input current protection switch.

**Input filter:** contains EMI suppression filter and Class CSPD. It provides clean AC power to the Chargers.

**Inverter:** an important back-end processing functional module of the UPS. In Normal mode, the inverter utilizes the DC output of the PFC circuit and inverts it into precise, regulated sine wave AC power.

**Bypass:** this module plays a very important role in enhancing the UPS reliability. In the event of an UPS fault that will not lead to UPS shutdown, such as an over-temperature condition, rectifier fault, inverter fault, the load will be automatically transferred to the bypass.

**Charger:** Supply the inverter with DC voltage and charge the batteries.

**Battery:** Sealed lead acid AGM or OPZV Batteries

**UPS output:** this module contains output EMI suppression filter and provides AC output for load with a full output protection(Over load )

# Telecommunication Inverter

## Single phase 1/2/3 KVA rack type



### INHF series



INHF series are applicable to telecom system with 48 vdc power supply. Adopt high efficiency SPWM inversion technology. Main machine allows direct AC/DC power from power room. with the aid of professional noise reduction measures, INHF series can be connected to teleprinter, telegraph terminal, wireless paging equipment, data switching exchange, local exchange, microwave communication equipment, program controlled exchange charging system, fax machine and all kinds of AC instrument, computers and various communication equipment.

#### Main Features

- Compliant with communication standard of AC and DC power supply system
- High-performance SPWM inversion technology
- Wholesome protective measures
- Low DC end current noise
- Rack type

### Characteristics

		INHF. 010	INHF. 020	INHF. 030
Model number	Power rating VA/W	1000/700	2000/1400	3000/2100
	technology	SPWM Technology		
Input DC parameters	Voltage range (VDC)	40-57		
	Rated input current (A)	20	40	60
Output AC parameters	Voltage (VAC)	220+/-2%		
	Frequency (Hz)	50 or 60 +/- 0.5%		
	Wave form	Sinewave		
	Power factor (%)	0.7		
	Total harmonic distortion	< 3% (Linear load)		
Panel display		Led indicators		
Protection		Low battery voltage, over voltage, overload, Short-circuit and high temperature		
Interface (option)		RS 232 data connection, dry contact and SNMP management interface		
Operating environment	Operation temperature	0°C to +40°C (+32°F to +104°F)		
	Storage temperature	-15°C to +50°C (+5 °F to +122°F)		
	Relative humidity	0% to 95% (non-condensing)		
	Audible noise (at 1 meter)	< 50 dB		
Physical	Weight	9 Kg	11 Kg	12 Kg
	Dimensions WxDxH (mm)	430x465x2U		
Applicable Standards		IEC 62040-1-1 (EN 50091-3)		
Approval		CE		

# Switching Mode Rectifier

## ES1948 Series (48V / 39.6A)



### Input

#### Voltage:

- Wide Input Range: 90 to 275Vac (90~185Vac at de-rated output power)

#### Frequency:

- 44~66 Hz

#### Input Protection:

- 13A HRC fuses at input of SMR (line and neutral); power circuit is turned off if the AC voltage exceeds 275Vac or falls to less than 90Vac

#### Current:

- <12Arms

#### Power Factor:

- >0.99 at full load; sinusoidal wave shape

#### THD:

- <5% at full load; meets requirements of EN61000-3-2

#### Efficiency:

- >91% at nominal main voltage

### Output

#### Voltage:

- Float -Adjustable 48~58 Vdc
- Equalise -Adjustable 50~61 Vdc

#### Current Limit:

- Adjustable 5~40A

#### Power (Max):

- 1900W at 48~60Vdc (input >185Vac)
- 900W at 48~60Vdc (input 90~185Vac)

#### Load Sharing:

- Better than ±5% of full scale with active current sharing from MCSU2048.

#### Protection:

- Overvoltage: only faulty unit shuts down
- Overcurrent: can sustain short circuit at output terminals indefinitely
- Over-temperature: gradual reduction of current limit if heat-sink temperature exceeds pre-set limit

#### Static Regulation:

- Line ±0.1%; Load ±1.0%

#### Dynamic Regulation:

- ±3% for 10~90% or 90~10% load variation
- ±1% for ±25% step change in AC input voltage

#### Output Noise:

- <2mVrms Psophometric weighting
- <10mVrms 10kHz-100MHz
- <100mV peak to peak 0~30MHz bandwidth

### Surge Protection:

- EN 61000-4-5

### EMC:

- Emission: EN 61000-6-3, Immunity: EN61000-6-1

### Inrush Current:

- <12 Arms peak at nominal mains voltage

### Voltage Withstand Test:

- 3.0 kVac--input and output (4.25 kVdc primary-secondary)
- 1.5 kVac--input earth (2.12 kVdc primary-ground)
- 0.75 kVdc--output earth

### Alarm and Status LED indications on SMR:

- On (Green): SMR functioning normally
- Alarm (Yellow): Blinking when any SMR alarm is present.
- Shutdown (Red): Stays on when SMR has turned off due to a signal from the MCSU2048 or an internal fault

### Environmental

#### Audible Noise at 1 Meter:

- <55 (dBA)

#### Operating temperature:

- Operating range -40°C~70°C; derated power at 50°C~70°C

#### Cooling:

- Two fan cooled, speed controlled and alarmed.

#### Humidity:

- 0~95%, non-condensing

#### Dimensions (WxDxH):

- 144 x 294.6 x 41 (mm)

#### Weight:

- <1.9 (kgs)



### Applications

- Telephone Exchanges
- Cellular phone / Radio base stations
- Satellite base stations
- Microwave links remote multiplexes
- Rural Telecommunications
- PABXs
- Railway switching controls
- Transmission and ISDN equipment
- Power Plants
- Airport, Hospital, Banks

### Efficiency

