

# POWER

CABLE & BROADBAND POWER SOLUTIONS

# SUPPLY



# About FYDQ

## 30+ Years Experience

Fangyuan Electric Apparatus Co., Ltd (hereinafter referred as Fangyuan, aka FYDQ) is the leading manufacturer of power supplies for cable and broadband in China. Since initial establishment in 1980's, Fangyuan has been serving the industry for over 30 years.



## Leading Manufacturer

Fangyuan specializes in AC and DC power conversion and protection products. A full-featured manufacturing facility in China completely owned by Fangyuan covers about 24000 m<sup>2</sup> (about 258334 sq. ft) and provides transformer building, metal fabrication, surface treatment, PCB and power supply assembly.

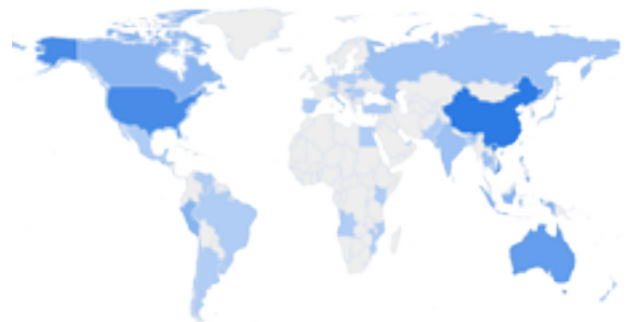
With millions of installations around the world, today Fangyuan is proudly serving customers in the fields of cable and broadband,

telecom, fabrication, power & energy and environmental protection from over 30 countries in 6 continents.

## Customer-Oriented

Focusing on and listening to customers' needs, continuing living on innovation and technology, dedicating energy and creativity to customers' achievements are Fangyuan's philosophy.

Benefiting from decades of technological accumulation and practice, Fangyuan has the ability to efficiently and effectively satisfy customers' needs. Intimate knowledge of customers' needs enables Fangyuan to provide ideal powering solution specially tailored to your applications.



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## Non-standby Power Supply & Power Booster

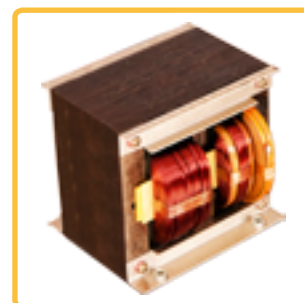
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# MD Series UPS

## Ferro-resonant / Quasi-square Wave Outdoor UPS



- ✓ Industry-proven uninterruptible power supply
- ✓ Well reputed reliability and cost-effectiveness
- ✓ Regulated quasi-square wave AC output
- ✓ Color touchscreen display with very friendly HMI
- ✓ Intelligent battery management system
- ✓ Ready for both Lead-Acid and LiFePO<sub>4</sub> batteries
- ✓ Lightning arrester integrated
- ✓ Easily accessible front panel connections and hot swappable inverter modules
- ✓ cTUVus certified, CE compliant
- ✓ Embedded DOCSIS<sup>®</sup> status monitoring (optional)

### Electrical

Input Voltage Range: -30% ~ +15%  
Input Frequency Range: ±3Hz

Output Waveform: quasi-square  
Output Voltage Regulation: ±5%  
Short Circuit Current: Programmable, 150% max.  
Efficiency: ≥90%  
Transfer Characteristics: uninterrupted

### Mechanical

Status Display: LED & color touchscreen display  
Input Connector: IEC320/C20  
Output Connectors: 5/8" F Type & Anderson PP45 (or equivalent)  
Battery Connector: Anderson PP75 or equivalent  
Finish: black powder coating  
Dimensions (WHD): 368 x 210 x 298mm  
14.5" x 8.3" x 11.8"

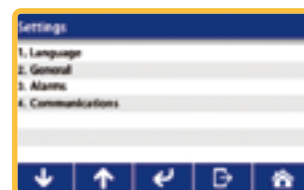
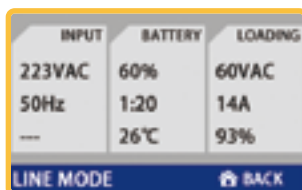
### Battery & Charger

Battery Type: lead-acid or LiFePO<sub>4</sub>  
Battery Voltage: 36VDC  
Cut-off Voltage: programmable  
Charger current: 10A max.  
Battery Runtime: depends on battery string(s)  
Temperature Compensation: programmable  
(0 to 5mV/cell/°C)

### Environmental

Storage Temperature: -40°C ~ 70°C  
Operating Temperature: -40°C ~ 55°C  
-40°F to 131°F  
Humidity: 0 to 95%, non-condensing (relative)

Model	Input Voltage (VAC) <sup>1</sup>	Frequency (Hz) <sup>1</sup>	Output Voltage (VAC)	Output Current (A)	Output Power (VA, max.)	Weight (kg/lb)
MD-6015-W	220	50	63	15	900	29/64
MD-6915-W	220	50	63/89	15/10	900	29/64
MD-6922-W	220	50	63/89	22/15	1350	33/73
MD-6915-L120	120	60	63/89	15/10	900	29/64
MD-6922-L120	120	60	63/89	22/15	1350	33/73
MD-6015-L	220	60	63	15	900	29/64



# MD-300 Series UPS

## 300W Sine-wave Outdoor UPS



- ✓ Compact, lightweight and ideal for RFoG & MDU applications
- ✓ Line interactive technology
- ✓ One single battery (12VDC) configuration reducing costs of ownership and maintenance
- ✓ Micro-processor regulated sinewave AC output
- ✓ Friendly and interactive 3.5" color touchscreen display
- ✓ Intelligent battery management system
- ✓ Lightning arrester integrated
- ✓ Reliable protections against input, output and short-circuit
- ✓ Easily accessible front panel connections
- ✓ Embedded DOCSIS® status monitoring (optional)

### Electrical

Input Voltage Range:  $\pm 15\%$   
Input Frequency Range:  $\pm 3\text{Hz}$

Output Waveform: sine wave  
Output Voltage Regulation:  $\pm 5\%$   
Overloading: Programmable, 125% max.  
Efficiency:  $\geq 90\%$   
Transfer Characteristics: uninterrupted

### Mechanical

Status Display: LED & color touchscreen display  
Input Connector: IEC320/C14  
Output Connectors: Anderson PP45 or equivalent  
Battery Connector: Anderson PP75 or equivalent  
Finish: black powder coated  
Dimensions (WHD): 234 x 197 x 220mm  
9.2" x 7.8" x 8.7"

### Battery & Charger

Battery Type: lead-acid or LiFePO<sub>4</sub>  
Battery Voltage: 12VDC  
Cut-off Voltage: programmable  
Charger current: 10A max.  
Battery Runtime: depends on battery string(s)  
Temperature Compensation: programmable  
(0 to 5mV/cell/°C)

### Environmental

Storage Temperature:  $-40^{\circ}\text{C} \sim 70^{\circ}\text{C}$   
Operating Temperature:  $-40^{\circ}\text{C} \sim 55^{\circ}\text{C}$   
 $-40^{\circ}\text{F} \sim 131^{\circ}\text{F}$   
Humidity: 0 to 95%, non-condensing (relative)

Model	Input Voltage (VAC) <sup>1</sup>	Frequency (Hz) <sup>1</sup>	Output Voltage (VAC)	Output Current (A)	Output Power (VA, max.)	Weight (kg/lb)
MD-300-W	220	50	63/89	5/3.3	300	12/26.5
MD-300-L	220	60	63/89	5/3.3	300	12/26.5
MD-300-L120	120	50	63/89	5/3.3	300	12/26.5



# DHT3 Series DOCSIS Transponder

DOCSIS® / EuroDOCSIS® 3.0 HMS Status Monitoring



- ✓ DOCSIS® 3.0 / EuroDOCSIS® 3.0 compliant
- ✓ More than just a transponder - it's a Spectrum Analyzer
- ✓ Temperature Hardened
- ✓ Integrated web server for status viewing
- ✓ Embedded or external applications
- ✓ SCTE - HMS compliant
- ✓ RS485 for local diagnose
- ✓ FCC / IEEE / RoHS Directive compliant

Model	DHT3D-N-PS-FY	DHT3X-N-PS-FY	DHT3E-N-PE-FY	DHT3X-N-PE-FY
Compliance	DOCSIS® 3.0		EuroDOCSIS® 3.0	
Power supplies supported	MD			
Upstream (Transmitter)				
Frequency Band	5 to 42 MHz	5 to 85MHz	5 to 65 MHz	5 to 85MHz
Level Range (S-CDMA)	All modulations: +17(≤1280KHz) / +20(2560KHz) / +23(5120KHz) to +56dBmV			
Level Range (TDMA)	32QAM & 64QAM: +17(≤1280KHz) / +20(2560KHz) / +23(5120KHz) ~ +57dBmV; 8QAM & 16QAM: +17(≤1280KHz) / +20(2560KHz) / +23(5120KHz) ~ +58dBmV; QPSK: +17(≤1280KHz) / +20(2560KHz) / +23(5120KHz) ~ +61dBmV			
Modulation Type	QPSK, 8QAM, 16QAM, 32QAM, 64QAM and 128QAM			
Modulation Rate (nominal)	TDMA & S-CDMA: 1280, 2560, 5120KHz; Pre-DOCSIS3 Operation: TDMA: 160, 320, 640KHz			
Bandwidth	TDMA & S-CDMA: 1600, 3200, 6400KHz; Pre-DOCSIS3 Operation: TDMA: 200, 400, 800KHz			
Output Impedance / Return Loss	75Ω / ≥6dB			
Downstream (Receiver)				
Frequency Range	54 to 1002MHz	108 to 1002MHz	85 to 1006MHz	108 to 1006MHz
Level Range (one channel)	-15dBmV to +15dBmV		64QAM: -17dBmV to +13dBmV; 256QAM: -13dBmV to +17dBmV	
Modulation Type	64QAM and 256QAM			
Symbol rate (Nominal)	5.0569Msym/s (64QAM); 5.361Msym/s (256QAM)		6.952Msym/s (64QAM & 256QAM)	
Bandwidth	6 MHz		8 MHz	
Total Input Power	33dBmV			
Input Impedance / Return Loss	75Ω / ≥6dB			
Communications & Interfaces				
Network Protocols	IP, TCP, DHCP, TP, TFTP, SNMP, HTTP			
MIBs	DOCSIS® MIBs, Power supply (ANSI/SCTE 38-4)			
Network Interfaces	F type, RJ-45			
LED Display	Monitor, Power, Cable, OK, RF Level, Ethernet			
Status Monitored				
Power Supply	Input voltage & frequency, output voltage, output current, output power, total battery voltage and individual battery voltage, status of inverter, tamper switch status			
Cable Modem	Upstream & Downstream Channels, Transmitter & Receiver Power			
Environmental				
Operating/Storage Temperature	-40°C to +70°C (-40 to +158°F)			
Humidity	0 to 90%, non-condensing			



# ECM30 Series Cable Modem

DOCSIS® / EuroDOCSIS® 3.0 HMS Transponder



- ✓ Temperature hardened cable modem
- ✓ Full-Band Capture (FBC) technology
- ✓ Eight bonded downstream channels with >340Mbps data rates
- ✓ Four bonded upstream channels with >120Mbps data rates
- ✓ Support for BSOD and L2VPN
- ✓ Upstream and Downstream Spectrum Analyzer function
- ✓ 10/100/1000 BASE-T auto sensing / auto-MDIX Ethernet port
- ✓ Very compact and small footprint

Model	ECM30-DS	ECM30-DX	ECM30-ES	EMMS3A-EX
Compliance	DOCSIS® 3.0		EuroDOCSIS® 3.0	
Power supplies supported	GD-CPT, GD-PBF and MD-300			
Upstream (Transmitter)				
Frequency Band	5 to 42 MHz	5 to 85MHz	5 to 65 MHz	5 to 85MHz
Level Range (S-CDMA)	All modulations: +17(≤1280KHz) / +20(2560KHz) / +23(5120KHz) to +56dBmV			
Level Range (TDMA)	32QAM & 64QAM: +17(≤1280KHz) / +20(2560KHz) / +23(5120KHz) ~ +57dBmV; 8QAM & 16QAM: +17(≤1280KHz) / +20(2560KHz) / +23(5120KHz) ~ +58dBmV; QPSK: +17(≤1280KHz) / +20(2560KHz) / +23(5120KHz) ~ +61dBmV			
Modulation Type	QPSK, 8QAM, 16QAM, 32QAM, 64QAM and 128QAM			
Modulation Rate (nominal)	TDMA & S-CDMA: 1280, 2560, 5120KHz; Pre-DOCSIS3 Operation: TDMA: 160, 320, 640KHz			
Bandwidth	TDMA & S-CDMA: 1600, 3200, 6400KHz; Pre-DOCSIS3 Operation: TDMA: 200, 400, 800KHz			
Output Impedance / Return Loss	75Ω / ≥6dB			
Downstream (Receiver)				
Frequency Range	54 to 1002MHz	108 to 1002MHz	85 to 1006MHz	108 to 1006MHz
Level Range (one channel)	-15dBmV to +15dBmV		64QAM: -17dBmV to +13dBmV; 256QAM: -13dBmV to +17dBmV	
Modulation Type	64QAM and 256QAM			
Symbol rate (Nominal)	5.0569Msym/s (64QAM); 5.361Msym/s (256QAM)		6.952Msym/s (64QAM & 256QAM)	
Bandwidth	6 MHz		8 MHz	
Total Input Power	33dBmV			
Input Impedance / Return Loss	75Ω / ≥6dB			
Communications & Interfaces				
Network Protocols	IP, TCP, DHCP, TP, TFTP, SNMP, HTTP			
MIBs	DOCSIS® MIBs, Power supply (ANSI/SCTE 38-4)			
Network Interfaces	F type, RJ-45			
LED Display	Monitor, Power, Cable, OK, RF Level, Ethernet			
Status Monitored				
Power Supply	Input voltage & frequency, output voltage, output current, output power, PoE parameters (optional)			
Cable Modem	Upstream & Downstream Channels, Transmitter & Receiver Power			
Environmental				
Operating/Storage Temperature	-40°C to +85°C (-40 to +185°F)			
Humidity	0 to 90%, non-condensing			

# PWE Series Outdoor Enclosure

## Powder Coated Aluminum for Pole & Wall Mountings



- ✓ Designed for cable/broadband outdoor powering applications
- ✓ Durable powder coated aluminum, welded construction
- ✓ Lockable heavy-duty slide battery tray
- ✓ Tool-free removable front door and top cover
- ✓ Lockable double-spring hasp built of stainless steel
- ✓ Service receptacles with breaker and tamper switch included as standard features
- ✓ Pole & wall mounting installation kits as standard feature
- ✓ Optional ground mounting installation kits

Model	Nr. of Slide Battery Tray(s)	Nr. of Battery Dock(s)	Interior Dimensions of Each Battery Dock (WHD)	Dimensions (WHD)	Weight (kgs / lbs)
PWE-1	N/A	1	368 x 280 x 270 mm 14.5" x 11.0" x 10.6"	420 x 645 x 311 mm 16.5" x 25.4" x 12.2"	14 / 30.9
PWE-3	1	1	541 x 272 x 345 mm 21.3" x 10.7" x 13.6"	636 x 645 x 400 mm 25.0" x 25.4" x 15.7"	25 / 55.1
PWE-4	1	1	691 x 272 x 365 mm 27.2" x 10.7" x 14.4"	776 x 645 x 420 mm 30.6" x 25.4" x 16.5"	33 / 72.8
PWE-6	2	2	541 x 272 x 345 mm 21.3" x 10.7" x 13.6"	636 x 951 x 400 mm 25.0" x 37.4" x 15.7"	38 / 83.8
PWE-8	2	2	691 x 272 x 365 mm 27.2" x 10.7" x 14.4"	776 x 951 x 420 mm 30.6" x 37.4" x 16.5"	52 / 114.6
PWE-9	3	3	541 x 272 x 345 mm 21.3" x 10.7" x 13.6"	636 x 1240 x 400 mm 25.0" x 48.8" x 15.7"	48 / 105.8

### Standard Features

Lockable heavy-duty slide battery tray  
Durable LED indicators  
Service receptacles with breaker  
Tamper Switch  
Generator Access Door  
Pole & Wall Mounting Installation Kits

### Optional Features

PI-RF Power Inserter w/ RF Interface (3/8" F type)  
PWE-OP-CF90 Cooling Fan  
PWE-OP-ESDx Enhanced Security Device  
PME-OP-GMK Ground Mounting Installation Kits  
PME-BCKx Battery Cable Kits  
PME-OP-EGC External Generator Connector





# PI-RF Series Power Inserter

1000MHz Performance w/ RF port



- ✓ 5 ~ 1000MHz broadband operation
- ✓ 5/8" female interface for both input and output
- ✓ 3/8" RF port for DOCSIS transponder connection
- ✓ 25A through current rating supports network powered telephony service
- ✓ Uninterrupted signal transmission while serving the power supply
- ✓ Built-of durable powder coated aluminum

*PI-RF series is more than a power inserter that "inserts" AC power to coaxial cable plant for powering amplifiers. It's also a device provides connection interface between cable TV plant and power supply inside an outdoor enclosure saving time and labor running coaxial cable to power supply inside the enclosure. RF port of PI-RF allows connecting transponder of the power supply to cable TV plant without placing a drop into the enclosure.*

## Nominal

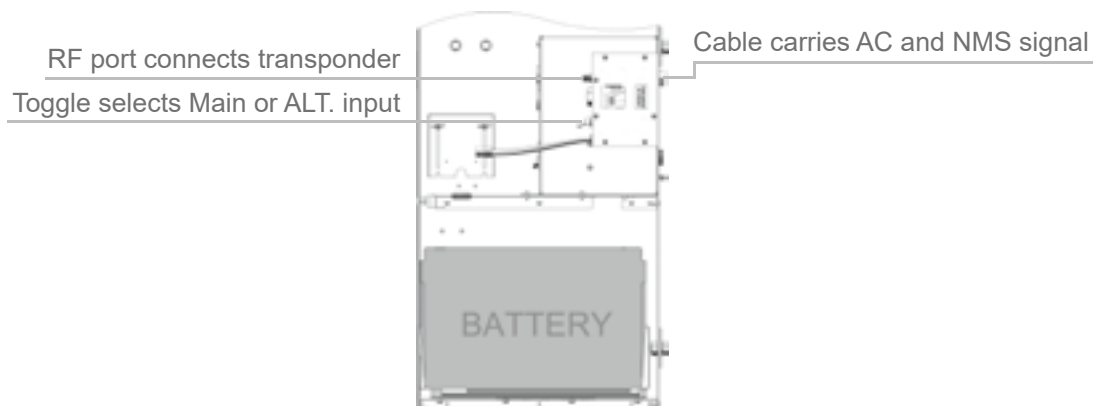
Operating Bandwidth: 5 - 1000MHz  
Total Current Capacity: 25A  
Flatness: 0.5dB  
Return Loss: 16dB  
Insertion Loss: 1.5dB  
Impedance: 75Ω

## Mechanical

AC Input Connections: 5/8" F Type (as Alternative)  
PP45 connectors (or equivalent as Main)  
AC Output Connections: 5/8" F Type  
RF Connection: 3/8"  
Material: aluminum  
Finish: powder coated  
Dimensions (WHD): 142 x 100 x 42mm / 5.6" x 3.9" x 1.6"  
Weight: 0.9kgs / 1.98lbs

## Environmental

Operating Temperature: -40°C ~ 55°C (-40 to +131°F)



(PI-RF inside PWE-3 Outdoor Enclosure)

# GD-CPT Series Power Supply

## Ferro-resonant Power Supply with PoE & Cable Modem



- ✓ Ferro-resonant transformer provides fully regulated, clean and reliable AC output
- ✓ Current-limited output and short-circuit protection
- ✓ MCU-controlled intelligent overload protection
- ✓ Quasi-square wave AC output
- ✓ Power over Ethernet (PoE) module as standard feature
- ✓ Powder coated aluminum housing for outdoor applications
- ✓ Service receptacle (NEMA 5-15R or customized)
- ✓ Optional DOCSIS / EuroDOCSIS Cable Modem as gateway

### Electrical

Input Voltage Range: 20% ~ +15%  
Input Frequency Range:  $\pm 3\%$   
Power Factor:  $>0.90$

Output Waveform: quasi-square  
Output Voltage Regulation:  $\pm 5\%$   
Short Circuit Current: programmable  
Efficiency:  $\geq 90\%$

### Mechanical

LED Display: power supply status, transponder status  
Input Interface: 3-P terminal block  
Output Interface: 5/8" F Type  
Service Receptacle: NEMA 5-15R (or customized)  
Material: powder coated aluminum  
Dimensions (WHD): 216 x 394 x 188mm  
8.5" x 15.5" x 7.4"

### Power-over-Ethernet (PoE)

Input Voltage Range: 85 to 265VAC  
Input Frequency: 50/60Hz  
Power Factor:  $>0.97$

Output Voltage: 50VDC @ 1A  
Ripple: 1%  
Line Regulation: 2%  
Switching Frequency: 75KHz  
Efficiency:  $>85\%$   
LAN Activity Indicator: No  
Gigabit LAN Port: Yes  
Remote Reset: No  
Reset Button: No  
Data In / PoE Interface: RJ45

### Environmental

Storage Temperature:  $-40^{\circ}\text{C} \sim 70^{\circ}\text{C}$   
Operating Temperature:  $-40^{\circ}\text{C} \sim 55^{\circ}\text{C}$   
Humidity: 0 to 95%, non-condensing (relative)

Model	Input Voltage (VAC) <sup>1</sup>	Frequency (Hz) <sup>1</sup>	Output Voltage (VAC)	Output Current (A)	Output Power (VA, max.)	Weight (kg/lb)
GD-CPT900-L120	120	60	60/90	15/10	900	17/37.5
GD-CPT900-W	220	50	60/90	15/10	900	17/37.5
GD-CPT1350-L120	120	60	60/90	22/15	1350	20/44.1
GD-CPT1350-W	220	50	60/90	22/15	1350	20/44.1

Notes: other configurations may be available. Both input and output can be customized. Please contact us for further information.

# GD-PBF Series Power Booster

## 330W Power Booster + DOCSIS 3.1



- ✓ Providing 110V or 220V AC power derived from 60V or 90V on the existing infrastructure in the field
- ✓ 330W max. output power
- ✓ Ideal for small cell, gateway and CCTV applications
- ✓ Wide availability from 50V to 90V
- ✓ 5/8" female interface for AC input
- ✓ Compact design and powder coated housing
- ✓ Pole & wall mounting installations
- ✓ Optional DOCSIS / EuroDOCSIS Cable Modem as gateway

### Electrical

Input Voltage: 50/65/75/90V, field-selectable  
Input Frequency: 50 / 60Hz  
Power Factor: >0.90

AC Output: 110V or 220V  
DC Output: 15VDC (for transponder only)  
Max. Output power: 330W  
Output Waveform: depends on input  
Output Protection: programmable

### Mechanical

Status Display: LED  
Input Interface: 5/8" female  
Output Interface: 3P terminal block & receptacle  
Finish: powder coated  
Dimensions (WHD): 186x249x173mm / 7.3"x9.8"x6.8"

### Environmental

Operating Temperature: -40°C ~ 55°C  
Humidity: 0 to 95%, non-condensing (relative)

Model	Input Voltage (VAC) <sup>1</sup>	Frequency (Hz) <sup>1</sup>	Output Voltage (VAC)	Output Current (A)	Output Power (VA, max.)	Weight (kg/lb)
GD-PBE-330A	50/65/75/90	50/60	110	3	330	6/13.2
GD-PBE-330B	50/65/75/90	50/60	220	1.5	330	6/13.2

Notes: other configurations may be available. Both input and output can be customized. Please contact us for further information.

# GD-MSC Series Backup Power System

## Master / Slave Power System



- **Master / Slave Backup Operation**
- **Auto-shift on Failure**

- ✓ Ferro-resonant transformer (CVT) provides clear and regulated AC power
- ✓ Current limited output and short protection
- ✓ Auto-reset on removal of short and/or overloading
- ✓ Weather-resistance powder coated enclosure
- ✓ Pole and wall mounting installations
- ✓ Durable multi-functional LED indicators for “status at a glance”

*Compared with traditional non-standby power supply, one of key advantages of FYGD-MSC is Master / Slave Backup Function. Two FYGD-MSC SERIES power supplies form a small powering system and monitor working status of each other. One unit stands by when another unit provides the loads with conditioned power. In the event that the unit in operation fails to operate normally, another unit will switch into operation mode automatically ensuring uninterrupted powering for the loads. Compared with other uninterruptible power solutions, FYGD-MSC is more rugged and more cost-effective.*

### Electrical

Input Voltage Tolerance: -20% ~ +15%  
Power Factor: >0.90 at full load  
Input Protection: fuse

Output Waveform: quasi-square  
Output Voltage Regulation:  $\pm 5\%$   
Short Circuit Current: 150% of max. current rating  
Efficiency:  $\geq 90\%$

### Time Delay Relay (TDR)

On-Startup: 10 seconds  
Transfer Time: 15 seconds

### Mechanical

Finish: powder coating  
Dimensions: 335 x 217 x 190mm / 13.2" x 8.5" x 7.5"  
LED Display: local feed;  
remote feed;  
alarm

### Environmental

Operating Temperature: -40°C ~ 55°C  
Humidity: 0 to 95%, non-condensing (relative)

Model	Input Voltage (VAC) <sup>1</sup>	Frequency (Hz) <sup>1</sup>	Output Voltage (VAC)	Output Current (A)	Output Power (VA, max.)	Weight (kg/lb)
GD-MSC900-CE	220	50	60	15	900	16/35.3
GD-MSC900-L	220	60	60	15	900	16/35.3
GD-MSC900-W	220	50	60/90	15/10	900	16/35.3
GD-MSC900-L120	120	60	60/90	15/10	900	16/35.3
GD-MSC1350-L120	120	60	60/90	22/15	1350	19/41.9

Notes: other configurations may be available. Both input and output can be customized. Please contact us for further information.

# Power Supply Switch & Backup

Make power supplies interactive

Optical node plays a key role in CATV networks. An optical node usually provides signals for 500 to 2000 subscribers to televue. In most of cases, however, the node is powered by only one power supply unit. In case of power supply failure, signal transmission and the service will be interrupted. Fangyua introduced SPS series power switch helping MSOs solve this problem. SPS-2116 monitors operation of two power supplies connected. In case of failure, SPS-2116 automatically obtains power from another unit and feed the power to loads of the failed, prevents interrupted signal transmission. SPS-5116C provides more connections.



SPS series uses rainproof housing for outdoor application. Built-in power inserter decreases cost of ownership further.

Model	SPS-2116	SPS-5116C
Number of Connection / Type	2, 5/8" THD	5, 5/8" THD
Operating Voltage (VAC)	30 to 90	30 to 90
Operating Bandwidth (MHz)	5 to 1000	5 to 1000
Loading Capacity (A)	15	15
Hum. Modulation (dB)	≥66	≥66
Return Loss (dB)	16 (860 ~ 1000MHz)	16 (860 ~ 1000MHz)
Insert Loss (dB)	1.5 (860 ~ 1000MHz)	1.5 (860 ~ 1000MHz)
Impedance (Ω)	75	75
Dimensions (mm / inch)	141 x 110 x 74 / 5.6 x 4.3 x 2.9	332 x 158 x 89 / 13 x 6.2 x 3.5
Weight (kg/lb)	0.7 / 1.54	3.2 / 7.1

## SPS-2X Series Power Switch

Intelligent Power Switch

SPS-2X is a new member of Fangyuan's power switch family, presents the latest technology in remote monitoring and control of power supplies in cable networks. SPS series ensures powering to critical signal processing equipment in a cable / broadband, while SPS-2X enables ordinary power supplies to be interactive and smart.

Microchip that SPS-2X provides precise control and measuring, as well as programmable control and protection against overloading of the power supplies. Power-Line Communication (PLC) technology prevents possible "bi-directional feeding" between power supplies. LCD display provides user-friendly interface for settings and operating status monitoring.



- ✓ 100VAC to 260VAC 50/60Hz operating voltage
- ✓ Programmable protections against overloading of power supplies
- ✓ Programmable output voltages of power supplies
- ✓ Fully control and monitoring over power supplies
- ✓ Smart LCD display and durable LED indicators
- ✓ Optional DOCSIS / EuroDOCSIS HMS transponder for remote monitoring

*Note: SPS-2X Intelligent Power Switch will be coming soon.*

# FYGD-C Series Power Supply

## Reliable Ferro-resonant Operation

- ✓ Proved by millions of installations
- ✓ Ferro-resonant transformer provides regulated, clean and reliable AC power
- ✓ Auto-reset upon removal of short-circuit and overloading
- ✓ Durable aluminum powder coated housing
- ✓ Pole & wall mounting installations for both indoor & outdoor

### Electrical

Input Voltage Range: -20% ~ +15%  
Power Factor: >0.90 at full load  
Input Protection: fuse

Output Waveform: quasi-square  
Output Voltage Regulation:  $\pm 5\%$   
Short Circuit Current: 150% of max. current rating  
Efficiency:  $\geq 90\%$

### Mechanical

Input Connector: 3P terminal block  
Output Connector: 5/8" F Type  
Material: powder coated aluminum  
Dimensions: 335 x 217 x 190mm / 13.2" x 8.5" x 7.5"

### Environmental

Operating Temperature: -40°C to 55°C / -40°F to 131°F

Model	Input Voltage (VAC) <sup>1</sup>	Frequency (Hz) <sup>1</sup>	Output Voltage (VAC)	Output Current (A)	Output Power (VA, max.)	Weight (kg/lb)
FYGD-C60-15A-L	220	60	60	15	900	16/35.3
FYGD-C6090-15A-W	220	50	60/90	15/10	900	16/35.3
FYGD-C6090-15A-L120	120	60	60/90	15/10	900	16/35.3
FYGD-C9060-15A-L120	120	60	60/90	15/22.5	1350	19/41.9

Note: other configurations are available. Both input and output can be customized. Please contact us for further information.



# FYGD-E Series Power Supply

## Cost-Effective Linear Power Supply

- ✓ Linear lamination transformer provides quiet operation
- ✓ Durable powder coated enclosure for outdoor applications
- ✓ Pole & wall mounting installations for both indoor & outdoor
- ✓ Cost-effective power solutions

### Electrical

Input Voltage Range:  $\pm 15\%$   
Power Factor: >0.90 at full load  
Input Protection: fuse

Output Waveform: sine wave  
Efficiency:  $\geq 80\%$

### Mechanical

Input Connector: 3P terminal block  
Output Connector: 5/8" F Type  
Material: powder coated steel  
Dimensions: 335 x 217 x 190mm / 13.2" x 8.5" x 7.5"

### Environmental

Operating Temperature: -40°C to 55°C / -40°F to 131°F

Model	Input Voltage (VAC) <sup>1</sup>	Frequency (Hz) <sup>1</sup>	Output Voltage (VAC)	Output Current (A)	Output Power (VA, max.)	Weight (kg/lb)
FYGD-E60-15A-W	220	50	60	15	900	16/35.3
FYGD-E60-15A-L	220	60	60	15	900	16/35.3
FYGD-E6090-15A-L120	120	60	60/90	15/10	900	16/35.3
FYGD-E9060-15A-L120	120	60	60/90	15/22.5	1350	19/41.9

Note: other configurations are available. Both input and output can be customized. Please contact us for further information.





# FYGD-CS Series Power Supply

## Excellent Insulation and Ingress Protection



- ✓ Non-metallic housing built of composite plastic reinforced with fiber glass
- ✓ Regulated, clean and reliable AC power from ferro-resonant transformer
- ✓ Auto-reset upon removal of short-circuit and overloading
- ✓ Security lock as standard feature
- ✓ Pole & wall mounting installations for both indoor & outdoor applications

### Electrical

Input Voltage Range: -20% ~ +15%  
Power Factor: >0.90 at full load  
Input Protection: fuse

Output Waveform: quasi-square  
Output Voltage Regulation:  $\pm 5\%$   
Short Circuit Current: 150% of max. current rating  
Efficiency:  $\geq 90\%$

### Mechanical

Input Connector: 3P terminal block  
Output Connector: 5/8" F Type  
Material: composite plastic with fiber glass  
Dimensions: 300 x 240 x 160mm / 11.8"x9.4"x6.3"

### Environmental

Operating Temperature: -40°C to 55°C / -40°F to 131°F

Model	Input Voltage (VAC) <sup>1</sup>	Frequency (Hz) <sup>1</sup>	Output Voltage (VAC)	Output Current (A)	Output Power (VA, max.)	Weight (kg/lb)
FYGD-CS60-15A-W	220	50	60	15	900	19/41.9
FYGD-CS60-15A-L	220	60	60	15	900	19/41.9
FYGD-CS6090-15A-W	220	50	60/90	15/10	900	19/41.9
FYGD-CS6090-22A-L120	120	60	60/90	15/10	900	19/41.9

Note: other configurations are available. Both input and output can be customized. Please contact us for further information.

# FYGD-F Series Power Supply

## High Performance Toroidal Transformer



- ✓ Linear toroidal transformer provides quiet operation
- ✓ Durable powder coated enclosure for outdoor applications
- ✓ Strand mounting installations
- ✓ Bidirectional outputs with embedded power inserter

### Electrical

Input Voltage Range:  $\pm 15\%$   
Power Factor: >0.90 at full load  
Input Protection: fuse

Output Waveform: sine wave  
Efficiency:  $\geq 80\%$

### Mechanical

Input Connector: 3P terminal block  
Output Connector: 5/8" F Type  
Material: powder coated steel  
Dimensions: 335 x 217 x 190mm / 13.2" x 8.5" x 7.5"

### Environmental

Operating Temperature: -40°C to 55°C / -40°F to 131°F

Model	Input Voltage (VAC) <sup>1</sup>	Frequency (Hz) <sup>1</sup>	Output Voltage (VAC)	Output Current (A)	Output Power (VA, max.)	Weight (kg/lb)
FYGD-F60-6A-W	220	50	60	6	360	5/11
FYGD-F60-8A-W	220	50	60	8	480	6/13.2
FYGD-F6090-10A-W	220	50	60/90	10/6.6	600	8/17.6
FYGD-F6090-10A-L120	220	60	60/90	10/6.6	600	8/17.6

Note: other configurations are available. Both input and output can be customized. Please contact us for further information.

## 3-in-1 Mounting AC UPS



- ✓ True online dual conversion technology
- ✓ Advanced microprocessor control
- ✓ Sine wave output, zero transfer time
- ✓ Wide input voltage range with power factor correcting
- ✓ Transient Voltage Surge Suppress (TVSS)
- ✓ User-friendly bypass protection
- ✓ Multifunctional LCD display with LED indicators
- ✓ On-battery start-up, generator supported
- ✓ 3 in 1 mounting design for rack, tower and desktop
- ✓ Optional SNMP adapter for remote status monitoring

## Input

Voltage: 220VAC (120VAC optional)  
Voltage Range: -45% to 130%  
Phase: single phase, 2-wire + grounding  
Frequency: 50Hz (60Hz optional)  
Frequency Range:  $\pm 8\%$   
Power Factor:  $\geq 0.97$

## Output

Frequency Stability:  $\pm 0.5\%$  at battery mode  
Load Crest Ratio: 3:1(max)  
Waveform: sine wave  
Power Factor: 0.8  
Overloading: 110% to 150% for 30 seconds;  
                  >150% for 300ms  
Transfer Time: 0ms

## Battery & Charger

Battery Voltage: see table below  
 Batteries per String: see table below  
 Charging Current: 6A at 80% load and nominal input  
 Charging Time: depends on capacity of battery string  
 Runtime: depends on capacity of battery string

## Mechanical

Comm. Interface: RS-232 & Intelligent Slot  
Status Display: op. mode, I/P & O/P voltage, loading,  
error, battery voltage  
Finish: powder coated

## Environmental

Operating Temperature: 0 to 40°C / 32°F to 104°F  
Humidity: 0~90% non-condensing (relative)  
Elevation: 1500m / 4921 feet, max.

Model	Rated Power	Battery Voltage	Dimensions	Weight (kgs / lbs)
MC1000	1KVA / 0.8KW	36VDC	482 x 88 x 432 mm 19" x 3.5" x 17"	7kgs / 15.4lbs
MC2000	2KVA / 1.6KW	96VDC	482 x 132 x 432 mm 19" x 5.2" x 17"	14kgs / 13Lbs
MC3000	3KVA / 2.4KW	96VDC	482 x 132 x 432 mm 19" x 5.2" x 17"	14kgs / 31lbs



## RACK



DESKTOP

*Notes: other configurations may be available. Both input and output can be customized. Please contact us for further information.*

- 

Operating Temperature: 0 to 40°C / 32°F to 104°F  
Humidity: 0~90% non-condensing (relative)  
Elevation: 1000m / 3280 feet  
Noise: <58dB at 1 meter

*Notes: other types of transformer may be available. Please contact us for further information.*

# Powernet™ SNMP Adapter

## AC UPS Status Monitoring



- ✓ HTTP, DHCP, SNMP supported
- ✓ Telnet and Hyper Terminal supported
- ✓ IP change doesn't require re-start up
- ✓ E-mail notification on emergency
- ✓ Fully programmable instant & scheduled tasks (both ON and OFF), auto-save log data
- ✓ Supports for online configuration, management, control and multiple clients management

### Interface

UPS Supported: MC, MG, MG31, MS, MS31, MS33  
Network Interface: RJ-45  
Ethernet: 10/100Mbps  
Serial Interface: RS232, RS422  
Installation: plug and play  
LED Display: Power, Status, Ready, Link/Active

Operating Voltage: 8VDC to 15VDC  
Power consumption: 2.5W

### Mechanical

Protocols: TCP/IP, UDP, SNMP, TELNET, SMTP, HTTP,  
SMTP, DHCP, DNS, TFTP, ARP, ICMP  
MIB: MIB-II (RFC1213, RFC1315, RFC1316)  
UPS MIB (RFC1628), PPC MIB

### Parameters Monitored

Input Parameter: voltage, frequency  
Output Parameter: voltage, frequency  
Battery: voltage, capacity, runtime, replacement log  
Alarm: high/low input, line failure, low battery,  
over-temperature  
UPS Status: operation mode, operating status, RTC  
Programmable: instant/scheduled shut-down/restart  
Event: programmable shut-down in case of low battery,  
low input, line failure, overload, over-temperature.  
History Log: date & time, input & output voltage,  
frequency, loading, battery voltage,  
temperature

### Environmental

Operating temperature: 0°C to 60°C / 32°F to 140°F  
Humidity: 10 to 85% non-condensing



# Transformers

## Ferro-resonant, EI Type, Toroidal, 3-Phase



Transformer is one of Fangyuan's featured products since initial establishment. Dry-type transformers, such as ferro-resonant transformer, toroidal transformer, EI type linear transformer and R Type transformer are all members of Fangyuan's big transformer family, and oil-immersed transformer for various applications as well. Transformers made by Fangyuan now are widely used in power, energy, environment protection, food processing, air processing and telecommunications.



### Ferro-resonant Transformer

also known as constant-voltage transformer (CVT), is a special lamination transformer. Benefiting from the features of regulated output, quasi-square waveform and wide input voltage range, ferro-resonant transformer is widely used in voltage regulator, lighting, inverter, battery charger and so on. It can also be designed to deliver sine wave output.

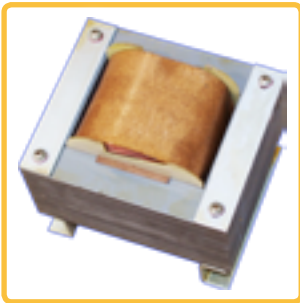
- ✓ Clean and regulated output voltages (fixed or adjustable)
- ✓ Excellent transient and surge suppression
- ✓ Extremely robust, rugged, and reliable
- ✓ Reducing filtering requirements for d-c applications



### Toroidal Transformer

are built around a ring-shaped core, which is made from excellent silicon steel. Compared to EI types, advantages of toroidal transformers include smaller size, lower weight, less mechanical hum, lower exterior magnetic field, low off-load losses and greater choice of shapes.

- ✓ Reduced audible noise
- ✓ Low form factor, flat design
- ✓ Single bolt mounting
- ✓ Inherently low magnetic flux leakage



### EI Type Linear Transformer

is a large portion of transformers in general use. The transformer can be open-frame or sealed in a small housing.

- ✓ Quiet and reliable operation
- ✓ Small footprint and versatile configurations
- ✓ Reduced costs of ownership
- ✓ Ideal for industrial control, lighting and power supplies



### Three-phase Transformer

that Fangyuan provides include both dry-type and oil-immersed transformers. The transformers are built with low-loss grain-oriented silicon sheet, featuring excellent performance and reliable operations.

- ✓ 1KVA to 1000KVA power rating
- ✓ Low-loss grain-oriented silicon sheet
- ✓ High efficiency and loading capacity
- ✓ Customized configurations for specific applications

LEADING MANUFACTURER OF  
**POWER SUPPLIES**  
FOR CABLE & BROADBAND

Visit us at [WWW.FYDQ.COM.CN/HOME](http://WWW.FYDQ.COM.CN/HOME) for additional information

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