

# Power Supply (2 kW, 3.2 kW, 6.5 kW)

## Programmable DC Power Supply



PTF20-80-60 2 kW/80V/60A (2U)

- Output voltage: 40 V up to 1500 V;
- Output current: 3.5 A up to 240 A;
- Output power: 2 / 3.2 / 6.5 kW;
- Wider voltage and current output range with constant power;
- Easy Master-Slave parallel or serial of up to 5 identical units;
- 0.1%+0.1%F.S. and 0.1%+0.2%F.S. accuracy for voltage and current measurement respectively;
- 20 user programmable sequence files, each support up to 20 steps;
- 1ms typical transient response, Voltage & current slew rate control;
- CV / CC priority start (prevents voltage or current overshoot with output ON);
- Remote sense compensation;
- Optional analog programming & monitoring interface;
- $\pm$ OVP,  $\pm$ OCP,  $\pm$ OPP, OTP,  $\pm$ LVP, foldback protection, as well as voltage / current limit;
- Standard LAN, RS232, optional GPIB interface;
- SCPI and ModBus RTU protocol;
- TFT color LCD display.

**Инфостера**

### General

PTF series DC power supplies provide wider voltage and current output range at full power, this means both low voltage/high current and high voltage/low current devices can be tested using a single power supply. The PTF series adopt 2U chassis for 2 kW and 3.2 kW mode, and 4U chassis for 6.5 kW model. The output voltage ranges from 40 V to 1500 V, and output current up to 240 A. Furthermore, PTF series allow for master-slave parallel or serial connection of up to 5 identical units to extend the output range.

The PTF series provide accurate output, fast transient response, low ripple noise, excellent line and load regulation, fast and precise programmability. With 4.3-inch color TFT screen, full keypad and rotary knob, convenient for benchtop users. In addition, this series offer standard LAN and RS232 interfaces support both SCPI and Modbus protocol, which is ideal for automated test systems.

Furthermore, the PTF series come standard with user programmable sequence, CV or CC priority start, CV-to-CC or CC-to-CV foldback, etc., to name a few.

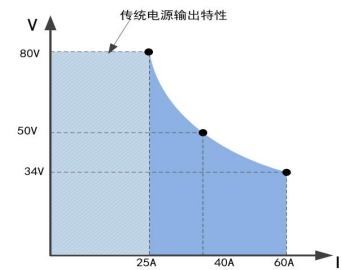
PTF Series (2 kW, 3.2 kW, 6.5 kW)

**AC input**

All models are provided with an active Power Factor Correction (PFC) circuit and designed for a usage in single-phase 190 VAC ~ 265 VAC input, power factor 0.98, power supply efficiency is larger than 90%.

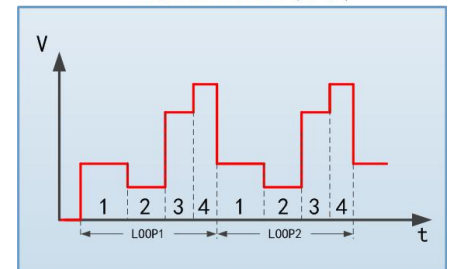
**Wide operating region with constant power**

PTF series power supply provides wide range of output voltage & current within the power rating of the power supply, this means both low voltage/high current and high voltage/low current DUTs can be tested using a single supply avoiding the need for multiple power supplies.



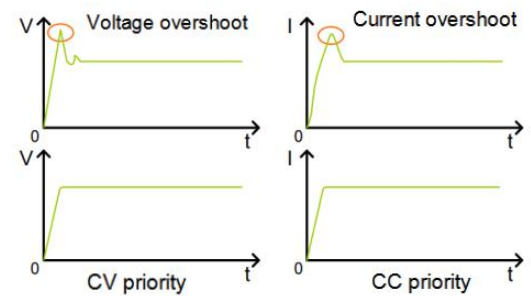
**Programmable sequence**

All models provides users with a programmable sequence function, which can simulate power supply interruptions, instantaneous drops, and other voltage and current changes. The sequence feature allows users to program a list of steps to the power supply's internal memory and execute them. A total of 20 steps can be allocated to each internal memory location, up to a maximum of 20 locations (sequences). The test sequence can be programmed locally through the keypad and rotary knob. Test sequences can be linked, as well as configured for single or repeated execution. Each steps' settings include voltage, current, duration, and duration time range is 1 ms...86400 s.



**CV / CC priority**

When power supply is connected to an inductive or capacitive load, it will cause voltage or current overshoot, which may trigger the protection of the device under test, or even cause the device under test to be damaged in severe cases. This series power supply provides CC priority and CV priority function, which forces the power supply to operate in CC or CV mode at the moment the output is turned on, effectively avoids the current or voltage overshoot resulted from capacitive or inductive load.



**Optional analog programming and monitoring interface**

In addition to front panel and remote interface control, there is a galvanically isolated analog interface terminal, located on the rear of the device. It offers analog inputs to set voltage, current from 0...100% through control voltages of 0 V...10 V or 0 V...5 V. To monitor the output voltage and current, there are analog outputs with 0 V...10 V or 0 V...5 V. Also, several inputs and outputs are available for controlling and monitoring the device status. The controlling speed of analog programming is 1000 points per second.

**Protective features**

For protection of the equipment connected, the series provide programmable protection functions such as OVP, OCP, OPP and LVP. Moreover, there are built-in hardware protection function OTP. If a protection is triggered, the DC output will be shut off immediately and a status signal will be prompt on the display and via the interfaces. Similarly, foldback protection is used to disable the output when a transition is made between the CC and CV operating modes. The DC output will be shut off and locked in foldback mode after a specified delay if the power supply transitions into CV or CC mode, depending on the foldback mode settings. This feature is particularly useful for protecting current or voltage sensitive loads.

**Master-slave parallel or serial operation**

The PTF series support master-slave parallel or series operation of up to 5 identical units. Parallel / series operation expands the output range of the power supply, greatly enhances the application area of the PTF power supply. Allowed maximum output voltage is 600V for series operation. Parallel and serial operation can not be mixed. When in serial operation, please plug out all current sharing cable, otherwise the power supply may be damaged.

**Digital interfaces**

All models features two galvanically isolated digital interfaces by default, these are standard LAN and USB (optional GPIB interface). USB, LAN can be used to control and monitor the devices either with SCPI language commands or ModBus RTU protocol, while with GPIB only SCPI is supported.

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**Control software**

The series provide a control software for Windows PCs, which can read test data, generate images, export reports, print reports, etc. in real time, it is convenient for customers to use.

**Options**

Automobile waveform;

GPIB interface;

Analog programming and monitoring interface;

Anti backflow current module.

**Model options**

Voltage	Model	Current	Power	Voltage	Model	Current	Power
40V	PTF20-40-120	120A	2kW	50V	PTF20-50-110	110A	2kW
	PTF32-40-120	120A	3.2kW		PTF32-50-110	110A	3.2kW
	PTF65-40-240	240A	6.5kW		PTF65-50-220	220A	6.5kW
Voltage	Model	Current	Power	Voltage	Model	Current	Power
80V	PTF20-80-60	60A	2kW	120V	PTF20-120-40	40A	2kW
	PTF32-80-60	60A	3.2kW		PTF32-120-40	40A	3.2kW
	PTF65-80-120	120A	6.5kW		PTF65-120-80	80A	6.5kW
Voltage	Model	Current	Power	Voltage	Model	Current	Power
160V	PTF20-160-30	30A	2kW	300V	PTF20-300-16	16A	2kW
	PTF32-160-30	30A	3.2kW		PTF32-300-16	16A	3.2kW
	PTF65-160-60	60A	6.5kW		PTF65-300-32	32A	6.5kW
Voltage	Model	Current	Power	Voltage	Model	Current	Power
400V	PTF20-400-12	12A	2kW	600V	PTF20-600-8	8A	2kW
	PTF32-400-12	12A	3.2kW		PTF32-600-8	8A	3.2kW
	PTF65-400-24	24A	6.5kW		PTF65-600-16	16A	6.5kW
Voltage	Model	Current	Power	Voltage	Model	Current	Power
800V	PTF20-800-8	8A	2kW	1000V	PTF20-1000-5	5A	2kW
	PTF32-800-8	8A	3.2kW		PTF32-1000-5	5A	3.2kW
	PTF65-800-16	16A	6.5kW		PTF65-1000-10	10A	6.5kW
Voltage	Model	Current	Power	Voltage	Model	Current	Power
1200V	PTF20-1200-5	5A	2kW	1500V	PTF20-1500-3.5	3.5A	2kW
	PTF32-1200-5	5A	3.2kW		PTF32-1500-3.5	3.5A	3.2kW
	PTF65-1200-10	10A	6.5kW		PTF65-1500-7	7A	6.5kW

**Optional accessories table 1**

Item	Type or specifications	Notes
GPIB interface	TF7130	RS232 to GPIB
Composite signal port	Model name ends with Suffix "F"	
Anti backflow current	Model name ends with Suffix "D"	TF7130
Automobile waveform test	Model name ends with Suffix "C"	

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**Optional accessories table 2: High current test cable matching table**

Specification	PTF2-2P15S	PTF16-2P20S	PTF25-2P25S	PTF50-2P20S	PTF50-2P40S	PTF120-2P20S	PTF150-2P20S
Max voltage	750V						
Max current	10A	60A	100A	200A	200A	300A	400A
Terminal	M8/Alligator	M8/M8	M8/M8	M8/M8	M8/M8	M8/M8	M10/M10
Cross-sectional area	4.0mm <sup>2</sup>	16mm <sup>2</sup>	25mm <sup>2</sup>	50mm <sup>2</sup>	50mm <sup>2</sup>	120mm <sup>2</sup>	150mm <sup>2</sup>
Length	~1.5m	~2m	~2m	~2m	~4m	~2m	~2m
Shape							

Specification table 1						
Model	PTF20-40-120	PTF20-50-110	PTF20-80-60	PTF20-120-40	PTF20-160-30	PTF20-300-16
Voltage	0~40V	0~50V	0~80V	0~120V	0~160V	0~300V
Current	0~120A	0~110A	0~60A	0~40A	0~30A	0~16A
Power	2000W					
Model	PTF32-40-120	PTF32-50-110	PTF32-80-60	PTF32-120-40	PTF32-160-30	PTF32-300-16
Voltage	0~40V	0~50V	0~80V	0~120V	0~160V	0~300V
Current	0~120A	0~110A	0~60A	0~40A	0~30A	0~16A
Power	3200W					
Model	PTF65-40-240	PTF65-50-220	PTF65-80-120	PTF65-120-80	PTF65-160-60	PTF65-300-32
Voltage	0~40V	0~50V	0~80V	0~120V	0~160V	0~300V
Current	0~240A	0~220A	0~120A	0~80A	0~60A	0~32A
Power	6500W					
Voltage programming						
Resolution	16Bits					
Accuracy	0.1%+0.1%F.S.					
Current programming						
Resolution	16Bits					
Accuracy	0.1%+0.3%F.S.		0.1%+0.2% F.S.			
External analog programming						
Control voltage	0~5V or 0~10V corresponds to 0~100%F.S.					
Voltage accuracy	0.2%F.S.					
Current accuracy	0.5%F.S.					
Analog output						
Output voltage	0~100%F.S. corresponds to 0~10V.					
Voltage accuracy	0.5%F.S.					
Current accuracy	0.5%F.S.					
Line regulation						
Voltage	0.01%+0.01%F.S.					
Current	0.02%+0.01%F.S.					
Load regulation						
Voltage	0.01%+0.05%F.S.		0.01%+0.01%F.S.			
Current	0.02%+0.1%F.S.					

**PTF Series (2 kW, 3.2 kW, 6.5 kW)**

Voltage measurement						
Resolution	16Bits					
Accuracy	0.1%+0.1%F.S.					
Current measurement						
Resolution	16Bits					
Accuracy	0.1%+0.3%F.S.			0.1%+0.2%F.S.		
Ripple noise						
Ripple Vpp	60mV	70mV	80mV	80mV	100mV	100mV
Ripple Vrms	20mV	20mV	20mV	20mV	40mV	40mV
Rise slew rate						
Voltage	5V/ms(max)					
Current	2A/ms(max)					
OVP Setting						
Range	0~110%F.S.					
Accuracy	1%F.S.					
Transient	Typical 1ms					
Efficiency	0.9(Typical)					
Parallel/Serial	Support master-slave parallel and serial operation					
Communication	RS232 and LAN					
AC input	190VAC~265VAC, 47Hz~63Hz, PF: 0.98(Typical)					
Operation temp	0°C~40°C					
Storage temp	-20°C~70°C					
Altitude	<2000m					
Dimension	430(W)×88(H)×453(D)mm (2kW&3.2kW model); 430(W)×177(H)×503(D)mm (6.5kW model)					
Weight	15kg(2kW&3.2kW model); 29kg(6.5kW model)					

Specification table 2						
Model	PTF20-400-12	PTF20-600-8	PTF20-800-8	PTF20-1000-5	PTF20-1200-5	PTF20-1500-3.5
Voltage	0~400V	0~600V	0~800V	0~1000V	0~1200V	0~1500V
Current	0~12A	0~8A	0~8A	0~5A	0~5A	0~3.5A
Power	2000W					
Model	PTF32-400-12	PTF32-600-8	PTF32-800-8	PTF32-1000-5	PTF32-1200-5	PTF32-1500-3.5
Voltage	0~400V	0~600V	0~800V	0~1000V	0~1200V	0~1500V
Current	0~12A	0~8A	0~8A	0~5A	0~5A	0~3.5A
Power	3200W					
Model	PTF65-400-24	PTF65-600-16	PTF65-800-16	PTF65-1000-10	PTF65-1200-10	PTF65-1500-7
Voltage	0~400V	0~600V	0~800V	0~1000V	0~1200V	0~1500V
Current	0~24A	0~16A	0~16A	0~10A	0~10A	0~7A
Power	6500W					
Voltage programming						
Resolution	16Bits					
Accuracy	0.1%+0.1%F.S.					
Current programming						
Resolution	16Bits					

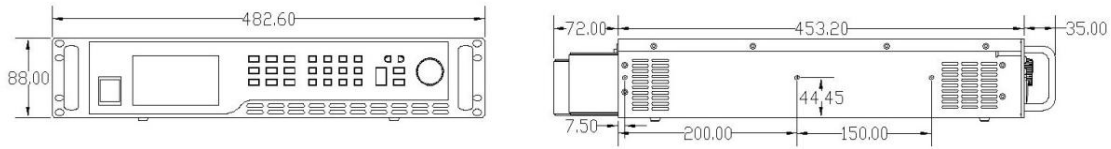
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Accuracy	0.1%+0.2% F.S.					
External analog programming						
Control voltage	0~5V or 0~10V corresponds to 0~100%F.S.					
Voltage accuracy	0.2%F.S.					
Current accuracy	0.5%F.S.					
Analog output						
Output voltage	0~100%F.S. corresponds to 0~10V.					
Voltage accuracy	0.5%F.S.					
Current accuracy	0.5%F.S.					
Line regulation						
Voltage	0.01%+0.01%F.S.					
Current	0.02%+0.01%F.S.					
Load regulation						
Voltage	0.01%+0.01%F.S.					
Current	0.02%+0.1%F.S.					
Voltage measurement						
Resolution	16Bits					
Accuracy	0.1%+0.1%F.S.					
Current measurement						
Resolution	16Bits					
Accuracy	0.1%+0.2%F.S.					
Ripple noise						
Ripple Vpp	300mV	300mV	500mV	450mV	500mV	700mV
Ripple Vrms	60mV	60mV	80mV	80mV	120mV	150mV
Rise slew rate						
Voltage	5V/ms(max)					
Current	2A/ms(max)					
OVP Setting						
Range	0~110%F.S.					
Accuracy	1%F.S.					
Transient	Typical 1ms					
Efficiency	0.9(Typical)					
Parallel/Serial	Support master-slave parallel and serial operation					
Communication	RS232 and LAN					
AC input	190VAC~265VAC, 47Hz~63Hz, PF: 0.98(Typical)					
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PTF Series (2 kW, 3.2 kW, 6.5 kW)

**Dimension**

2kW, 3.2kW model dimension



6.5kW model dimension

