



PS POWER SOURCE

- Single and three phase versions available
- Broad range of output voltages, currents and allowable loads
- High stability and low harmonic distortion
- Multilevel protection system
- Individual setting of each voltage, current and phase angle in each phase
- Four-quadrant operation
- Harmonics generation up to the 41st

INTRODUCTION

The PS family of power sources was designed to provide a stable alternating current and voltage source for electricity meter test equipment. The PS1(H)⁽¹⁾ is intended for single-phase systems whereas the PS3(H)⁽¹⁾ is intended for three-phase systems.

The basic functional components of the PS power sources are:

- VIS voltage integrated source
- CIS current integrated source
- ACU control unit

OPERATIONAL HIGHLIGHTS

Internal DSP controlled digital feedback loops ensures stability over time, quick setup of required parameters and low non-linear distortions of the output current and voltage signals. Precision regulation systems make the PS family capable of managing direct loads with a broad range of characteristics, from pure capacitive loads, through those that are resistive or inductive. Because of this ability, no external load compensators are needed.

Thanks to a broad range of output voltages and currents, setting any phase angle and generating harmonics is possible. The PS family efficiently tests all types of energy meters while retaining all the required electrical parameters.

Operational reliability and safety is provided through multilevel protection. Thanks to fully automatic settings and adjustments the PS family offers high reliability and class-leading continuity.

The power stages of the power amplifiers integrate PWM technology, ensuring high efficiency and very small thermal losses.

HARMONICS ABILITY

Standard versions of the PS power source are able to generate harmonics up to the 21st order. Enhanced harmonics versions marked with H are able to generate harmonics up to the 41st order.

ACU CONTROL UNIT

The PS power sources are equipped with the ACU-3000 (for three-phase systems) or ACU-1000 (for single phase systems) control unit. Its main tasks are: detecting shorting between voltage and current circuits, controlling emergency switches, controlling tariff systems, signaling the presence of dangerous voltages on suspension racks and more.

TECHNICAL DATA

PS model	PS3(H) ⁽¹⁾		PS1(H) ⁽¹⁾	
Available output power for linear loads ⁽²⁾	3 x 400VA - VIS-400(H) 3 x 1200VA - VIS-1200(H) 3 x 2600VA - VIS-2600 3 x 600VA - CIS-600(H) 3 x 1600VA - CIS-1600(H) 3 x 3000VA - CIS-3000(H) 3 x 3600VA - CIS-3600		1 x 400VA - VIS-400(H) 1 x 1200VA - VIS-1200(H) 1 x 2600VA - VIS-2600 1 x 600VA - CIS-600(H) 1 x 1600VA - CIS-1600(H) 1 x 3000VA - CIS-3000(H) 1 x 3600VA - CIS-3600	
Working voltage range	3 x 0 ... 350V (Phase-Neutral) / 3 x 0 ... 600V (Phase-Phase) ⁽³⁾		1 x 0 ... 350V (Phase-Neutral) / 1 x 0 ... 600V (Phase-Phase) ⁽³⁾	
Working current range	3 x 1mA ... 120A ⁽³⁾	3 x 1mA ... 200A ⁽³⁾	1 x 1mA ... 120A ⁽³⁾	1 x 1mA ... 200A ⁽³⁾
Frequency of the fundamental	40 ... 70Hz ⁽⁴⁾			
Harmonics	standard version up to the 21 st , user programmable H version up to the 41 st , user programmable ⁽⁵⁾			
Phase angle range (independently for each voltage and current signal)	0°... 360°			
Resolution of output current/voltage adjustment	0.002%			
Resolution of phase angle adjustment	0.001°			
Resolution of frequency adjustment	0.001Hz			
Stability of the output current	≤ 0.005% (time base: 150s)			
Stability of the output voltage	≤ 0.005% (time base: 150s)			
Output voltage/current accuracy	According to the accuracy of the reference standard			
Accuracy of the phase angle	According to the accuracy of the reference standard			
Accuracy of the frequency	According to the accuracy of the reference standard			
Total Harmonic Distortion (THD)	output voltage <0.1% output current <0.3%			
Efficiency of the output power stages	>85%			
Protection	Multilevel protection systems safeguard against overcurrent, overvoltage, short circuit/ open circuit, thermal, earth leakage.			
Operation indication & failure diagnose	Voltage and current integrated source has an LED to indicate the operation status. In the event of failure (internal) the LED blinks/ flashes to indicate the causes of failure.			
Construction	19" standard rack mounting system for indoor laboratory application			
Control	Isolated RS-422			
PF compensation of the mains voltage according to EN 60555 / IEC 555	Yes			
Voltage dips and short interruption test as per Annex B as per IEC 62052-11	Yes, all three waveforms			
Mains	Unstabilized mains: 3 x (150 ... 260)/(260 ... 450)V, 45 ... 65Hz			

(1) Notation (H) means that optional H version is available, e.g. PS1(H) means two versions are available PS1 and PS1H.

(2) Different models of voltage sources can be freely mixed with different models of current sources.

(3) Other values are available upon request.

(4) Operating range. Specified range from 45 to 65 Hz.

(5) Fulfills Chinese standard JJG 597-2005.

For additional technical details, please contact our sales department (sales@metertest.eu)

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