MTE Meter Test Equipment

PSP 10

Static single-phase power source

The PSP 10 is a single-phase, computer controlled voltage and current source, designed for use in meter test systems and in the laboratory. The model is housed in a 19”-plug-in unit, 6 height modules.

The PSP 10 creates a single-phase network, using a base of electronically generated sine waves. The network is completely independent of the supply voltage, and the use of a voltage stabiliser at the entry point is not necessary. The amplifiers are of pulse-width modulation type.

The PSP 10 is controlled by a PC via RS 232 C serial standard interface with the STE 10 as control unit.

For safety reasons adding the STE 10 control unit to the PSP 10 is strongly recommended. The STE 10 has the following functions:

- On-Off switch
- Emergency stop switch
- Surveillance of the mains power supply and protection against short circuits between U and I in the output circuits

In the test station, the PSP 10 is provided with further components, e.g. control unit, reference meter, completely wired in a cabinet.

Key features of the PSP 10

- Compact electronic voltage and current source (single-phase)
- Controlled by PC via serial interface RS 232 C
- Phantom load generation for active and reactive power meters
- High accuracy and stability of the adjusted load independent of supply voltage deviations
- Power efficiency > 85 %
- Voltage and current range:
  Voltage: 30 V up to 300 V
  Current: 1 mA up to 120 A
- Output power:
  Voltage: 800 VA
  Current: 1200 VA

Options

- Software module for fully automatic measurements
- Generation of harmonics
- Generation of ripple control signals

Technical Data PSP 10

	Description	
Supply voltage		3x230 / 400 V ±15 %
		50 / 60 Hz ±15 %
Power consumption	maximum	2.4 kW (3.5 kVA)
Housing	19"-Plug-in unit	6 HE
Dimensions (complete Device)	Width x Height x Depth [mm]	485 x 265 x 600
Weight		ca. 70 kg
Ambient temperature	(Standard)	+10 °C ... +40 °C
Function temperature		-10 °C ... +50 °C
Power efficiency	at full load	> 85 %
Output frequency	fundamental	45 ... 65 Hz (optional Linesynchron)
Resolution		0.01 Hz
Phase angle		0 ... 360°
Resolution		0.01°
Voltage source		
Voltage range	Phase - Neutral	30 ... 300 V
Internal ranges	150 ... 300 V	800 VA
	75 ... 150 V	800 VA
	30 ... 75 V	800 VA
Resolution	at the final range value	0.01 %
Adjustment error	at the final range value	< 0.05 %
Distortion factor	on linear Load	< 0.5 %
Stability	(time base of measure. 5 s)	better than 0.05 % / 2 min
	(time base of measure. 150 s)	better than 0.005 % / h
Load regulation	0 % - 100 % Load	< 0.01 %
Capacitive load		≤ 2 µF | ≤ 4 µF
Generation of harmonics	2. - 5. Harmonics	max. 40 %
	6. - 20. Harmonics	max. 10 %
	Sum of all harmonics	max. 40 %
	at the final range value	max. 10 %
Peak voltages on the individual voltage ranges and the belonging Peak currents	467 V	4.14 A
	233 V	8.32 A
	117 V	16.56 A
Current source		
Current range		1mA ... 120A
Internal ranges	80 A ... 120 A	1200 VA
	12 A ... 80 A	1200 VA
	1.2 A ... 12 A	480 VA
	120 mA ... 1.2 A	48 VA
	12 mA ... 120 mA	4.8 VA
	1 mA ... 12 mA	0.48 VA
Resolution	at the final range value	0.01 %
Adjustment error	at the final range value	< 0.05 %
Distortion factor	on linear Load	< 0.5 %
Stability	(time base of measure. 5 s)	better than 0.05 % / 2 min
	(time base of measure. 150 s)	better than 0.005 % / h
Load regulation	0 % - 100 % Load	< 0.01 %
Generation of harmonics	2. - 5. Harmonics	max. 40 %
	6. - 20. Harmonics	max. 10 %
	Sum of all harmonics	max. 40 %
	at the final range value	max. 10 %
Peak currents on the individual current ranges and the belonging peak voltages	187 A	15.48 V
	124 A	23.4 V
	18.7 A	62.2 V
	1.87 A	62.2 V
	187 mA	62.2 V
	18.7 mA	62.2 V