

## SPE 120.3

Static three phase power source Version 200A



The SPE 120.3 is a three-phase computer controlled voltage and current source, designed for use in meter test systems and in the laboratory. The model is accommodated in a 19"-plug-in unit.

The SPE 120.3 creates a three-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 SPE 120.3 is controlled by a P.C. via RS 232 serial standard interface.

It is necessary to complete the power source with a STE 10 control unit with the following functions: on-off switch, emergency stop switch, surveillance of the mains power supply, protection against short circuits between U and I in the output circuits.

When only the SPE 120.3 rack is required the customer has to provide these functions by himself.

In the test station version the SPE 120.3 will be delivered together with further components, e.g. control unit, reference meter, etc. completely wired in a cabinet.

### Key points of the SPE 120.3

- Compact electronic current and voltage source (three phase)
- Controlled by P.C. via serial interface RS 232
- Phantom load generation for three-wire and four-wire active and reactive power meters.
- High accuracy and stability of the adjusted load independent of supply voltage deviations.
- Power efficiency > 85 %
- Current and voltage range:  
1 mA to 200 A, 30 V to 300 V
- Output power: 600 VA per phase

### Options

- Software CALegration
- Generation of harmonics
- Generation of ripple control

## Technical Data SPE 120.3

|                                | Description                 | 600VA   |
|--------------------------------|-----------------------------|---|
| Supply voltage:                |                             | 3x230 / 400 V $\pm 15$ %<br>50 / 60 Hz $\pm 15$ % |
| Power consumption:             | maximum                     | 4.0 kW (6.8 kVA)                                  |
| Housing:                       | 19"-Plug-in unit            | 12 HE   |
| Dimensions (complete Device) : | Width x Height x Depth [mm] | 485 x 530 x600                                    |
| Weight:                        |                             | ca. 100 kg  |
| Ambient temperature:           | (Standard)                  | +10 °C ... +40 °C                                 |
| Function temperature:          |                             | -10 °C ... +50 °C                                 |
| Power efficiency:              | at full load                | > 85 %  |
| Output frequency:              |                             | 45 ... 65 Hz                                      |
| Resolution:                    |                             | 0.01 Hz   |
| Phase angle:                   |                             | 0 ... 360 degree                                  |
| Resolution:                    |                             | 0.01 degree                                       |

### Voltage source

|   | Description   | 600VA   |
|---|---|---|
| Voltage range:  | Phase - Neutral   | 30 ... 300 V  |
| Internal ranges:  | 150 ... 300 V<br>75 ... 150 V<br>30 ... 75 V  | 600 VA<br>600 VA<br>600 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)<br>(time base of measure. 150 s)                                | better than 0.05 % / 2 min<br>better than 0.005 % / h |
| Load regulation:  | 0 % - 100 % Load  | < 0.01 %  |
| Capacitive load:  |   | $\leq 4 \mu\text{F}$                                  |
| Generation of harmonics:  | 2. - 5. Harmonics<br>6. - 20. Harmonics<br>Sum of all harmonics<br>at the final range value | max. 40 %<br>max. 10 %<br>max. 40 %<br>max. 10 %      |
| Peak voltages on the individual voltage ranges and the belonging Peak currents: | 467 V<br>233 V<br>117 V   | 3.1 A<br>6.2 A<br>12.4 A                              |

### Current source

|   | Description   | 600VA  |
|---|---|--|
| Current range:  |   | 1mA ... 200A   |
| Internal ranges:  | 100 A ... 200 A<br>12 A ... 100 A<br>1.2 A ... 12 A<br>120 mA ... 1.2 A<br>12 mA ... 120 mA<br>1 mA ... 12 mA | 600 VA<br>600 VA<br>480 VA<br>48 VA<br>4.8 VA<br>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)<br>(time base of measure. 150 s)  | better than 0.05 % / 2 min<br>better than 0.005 % / h    |
| Load regulation:  | 0 % - 100 % Load  | < 0.01 %   |
| Generation of harmonics:  | 2. - 5. Harmonics<br>6. - 20. Harmonics<br>Sum of all harmonics<br>at the final range value                   | max. 40 %<br>max. 10 %<br>max. 40 %<br>max. 10 %         |
| Peak currents on the individual current ranges and the belonging peak voltages: | 311 A<br>124 A<br>18.7 A<br>1.87 A<br>187 mA<br>18.7 mA   | 4.6 V<br>11.7 V<br>62.2 V<br>62.2 V<br>62.2 V<br>62.2 V  |