MTE **Meter Test Equipment**

ZVE

Power Source for Meter Testing

The ZVE Power Source was specially designed for use as an electro technical current and voltage generator in Meter Test Systems and also in other automatic test systems.

The power source creates the current and voltages - the phantom load - required for measuring the meters. The network as generated by the ZVE system is completely distinct from that of the mains power supply. The generated values are, consequently, practically independent of the quality of the public power supply.

The cabinet is equipped with the following components

- Control unit STE 10
- One up to three Voltage power sources PSU 10
- One up to three Current power sources PSI 10
- Digital electronic reference meter SRS 121.3 or other types (Option)

In each power source there is a digital generator and an amplifier to generate the sine waves for current and voltage

Principal Characteristics

- Compact phantom load (1 or 3 phase)
- Available current and voltage ranges:
  30 V to 300 V, 1 mA to 120 A
  (other values on demand)
- Amplifier type of the voltage and current power sources: pulse width modulated
- Efficiency of the amplifiers: > 85 %
- Output Power: up to 4000 VA per phase
- Operation of the ZVE over an RS 232 C serial line interface

Further Characteristics

The generators create the nominal values for the amplifiers with extremely high accuracy and stability. The amplifiers use the pulse-width modulation principle, this implies a high working efficiency and therefore very low heat losses. The construction of the ZVE is consequently very compact.

ZVE Technical Data

Auxiliary voltage:	3 x 230 / 400 V ± 15 %, 50 (60 Hz) ± 5 %, (other voltages or frequencies on demand)
Power Consumption:	3 x (Output power U + output power I) x 1.2 [in VA]

Fundamental Frequency

Range:	45 … 65 Hz (Optional mains voltage synchronisation)
Resolution:	0.01 Hz

Phase angle

Range:	0 … 360 °
Resolution:	0.01 °

Example

Output power U:	2000 VA
Output power I:	2000 VA
Power consumption:	3 x (2000 + 2000) x 1.2 = 3 x 4800 VA
Housing:	Two 19" cabinets
Dimensions:	W 1125 x D 800 x H 1725 mm

Control Unit STE 10

Construction:	19" drawer, 3 HE
Standard Functions:	Protection against U/I short circuit in the output circuits
	Emergency On/Off
	Central On/Off switch
	Network surveillance system
	Generation of tariff unit control signals (optional)

Voltage Power Source PSU 10

Construction:	19" drawer, 6 HE
Output power: (Standard values)	1000 VA (6 HE) 2000 VA (6 HE) 4000 VA (6 HE)

This unit is fully described in the PSU 10 data sheets

Current Power Source PSI 10

Construction:	19" Drawer, 6 HE
Output power (Standard values):	1000 VA (6 HE) 2000 VA (6 HE) 4000 VA (6 HE)

This unit is fully described in the PSI 10 data sheets

Reference Standard (optional)

According to the system required, one of the following reference standards may be used:

- **SRS 121.3, accuracy class 0.05**
  Current range: 1 mA ... 120 A or 1 mA ... 200 A
- **SRS 400.3, accuracy class 0.02**
  Current range: 1 mA ... 120 A or 1 mA ... 200 A
- **PRS 600.3, accuracy class 0.02**
  Current range: 1 mA ... 120 A
- **K2008, accuracy class 0.005**
  Current range: 1 mA ... 160 A

Each of these units is fully described in its own data sheet.