

ZERA

Precision- Power- Calibration- System

PPCS



The new ZERA single phase precision power calibration system PPCS is developed for the traceable calibration of measuring instruments for active-, reactive and apparent power and has a great importance for national metrology institutes.

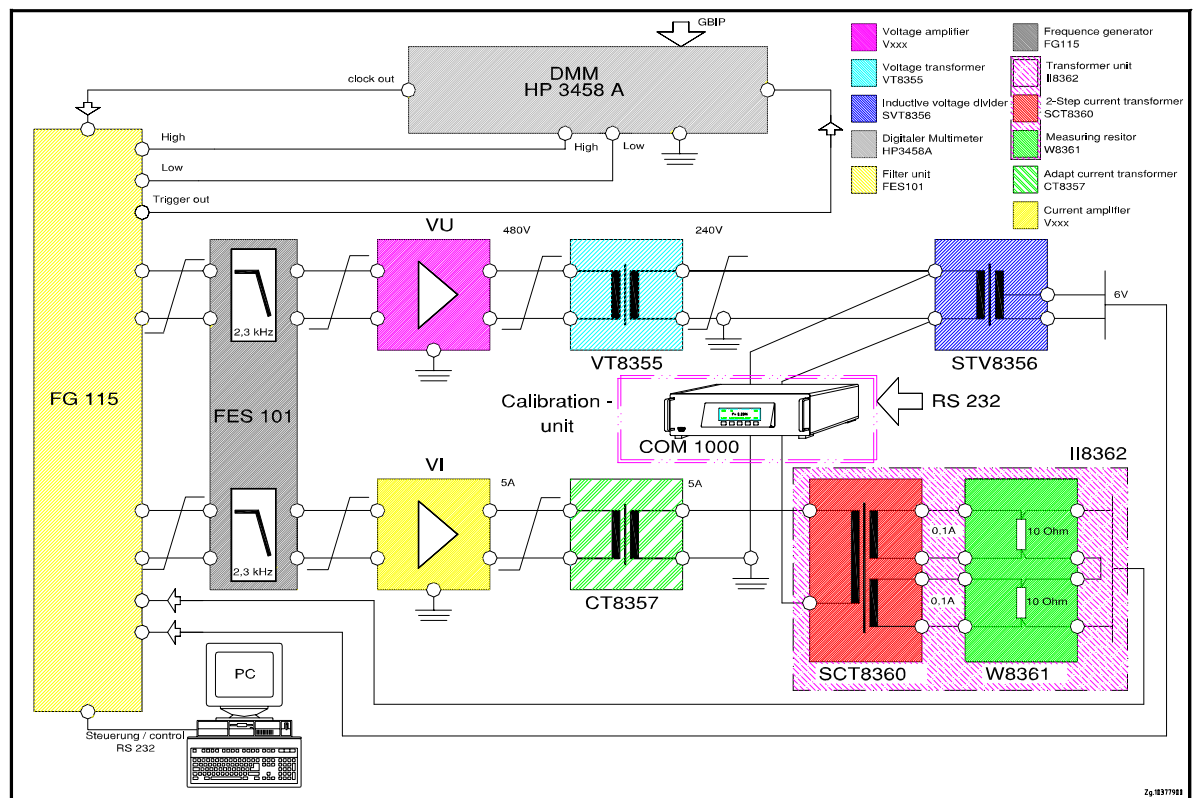
The new ZERA precision power calibration system PPCS generates sinusoidal voltage and current with adjustable phase shifts of 0° to $\pm 180^\circ$ in the technical frequency range up to 60Hz.

The stable displaying and highly precise measurement of active-, reactive and apparent power is possible for free selectable power factors with a standard measuring uncertainty of $< 10 \cdot 10^{-6}$ (related to the nominal value of the apparent power) by frequencies from $16^{2/3}$ Hz to 60Hz.

Capability characteristics

- Highly precise current-, voltage-, and power calibration
- Simple traceability to national standards
- High measuring stability by using of many years approved ZERA-components.
- High repetition accuracy of the measured values
- Smallest measurement deviations of $< 10 \cdot 10^{-6}$

Measurement principle



Technical data

Output voltage:	60V – 480V
Output current:	0,1A – 10A (optional 5mA – 100A)
Frequency:	50Hz, 60Hz
Power factor:	0 – 1 – 0 – (-1)
Power deviation:	$<10 \cdot 10^{-6}$
Design:	19" cabinet, 38 height modules with rear lockable door

The particular components of the PPCS

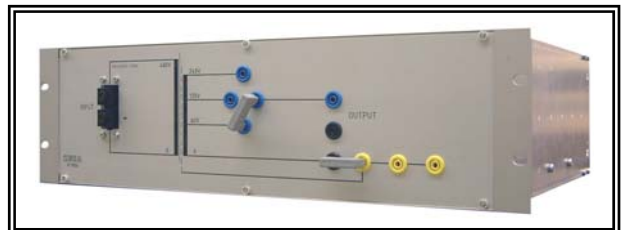
Voltage amplifier

Linear ZERA- Voltage amplifier for generation of the output voltages of 60V- 480V in the frequency range of 40Hz - 60Hz.



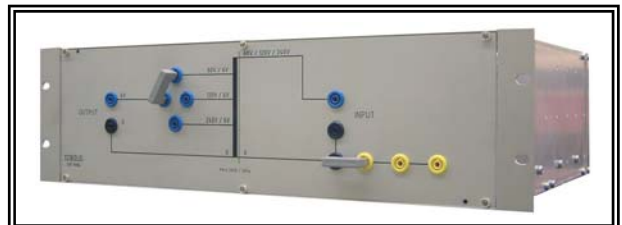
Voltage transformer

The voltage transformer VT8355 is used for galvanic separation.



Inductive voltage divider

The voltage divider STV8356 generates the measuring value (6V) from the following primary ranges : 480V/ 240V/ 120V/ 60V.



Digital multimeter

8¹/₂ digit Digital-Multimeter HP3458A to acquire the measured values.



Filter unit FES 101

Antialaying-Filter FES 101



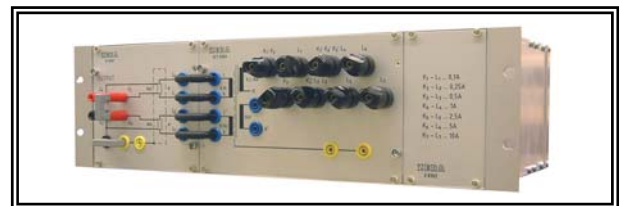
Frequency generator FG115

Programmable dual voltage amplifier



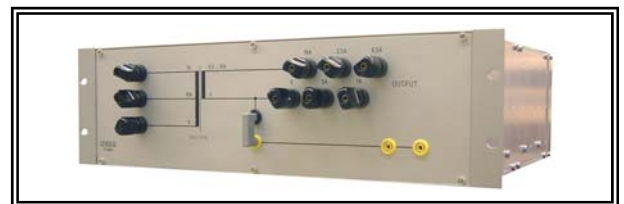
2-Step Current transformer II8362

current transformator II8362 with implemented measuring resistor.
Prim: 10A/5A/,25A/1A/0,5A/
0.25A/0.1A sec.:0.1A(1V) R=10 Ω



Adapt Current transformer CT8357

The Adapt Current transformer CT8357 is used for galvanic separation.



Current amplifier

Linear ZERA-Current amplifier for generation of the output currents of 0,1A – 10A in the frequency range of 40Hz – 60Hz.
(optional 0,005A – 100A)



Control PC for the PPCS

Windows based Software to control the frequency generator (RS232), digital multimeter (IEEE488) and test devices (IEEE488). Different configurations can be selected.



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