



# EMSYST

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## Five Position Universal Meter Test Bench

# TST 3/5 Universal

**New Unique Design! Meter Testing with Closed U-I Links!**



### General

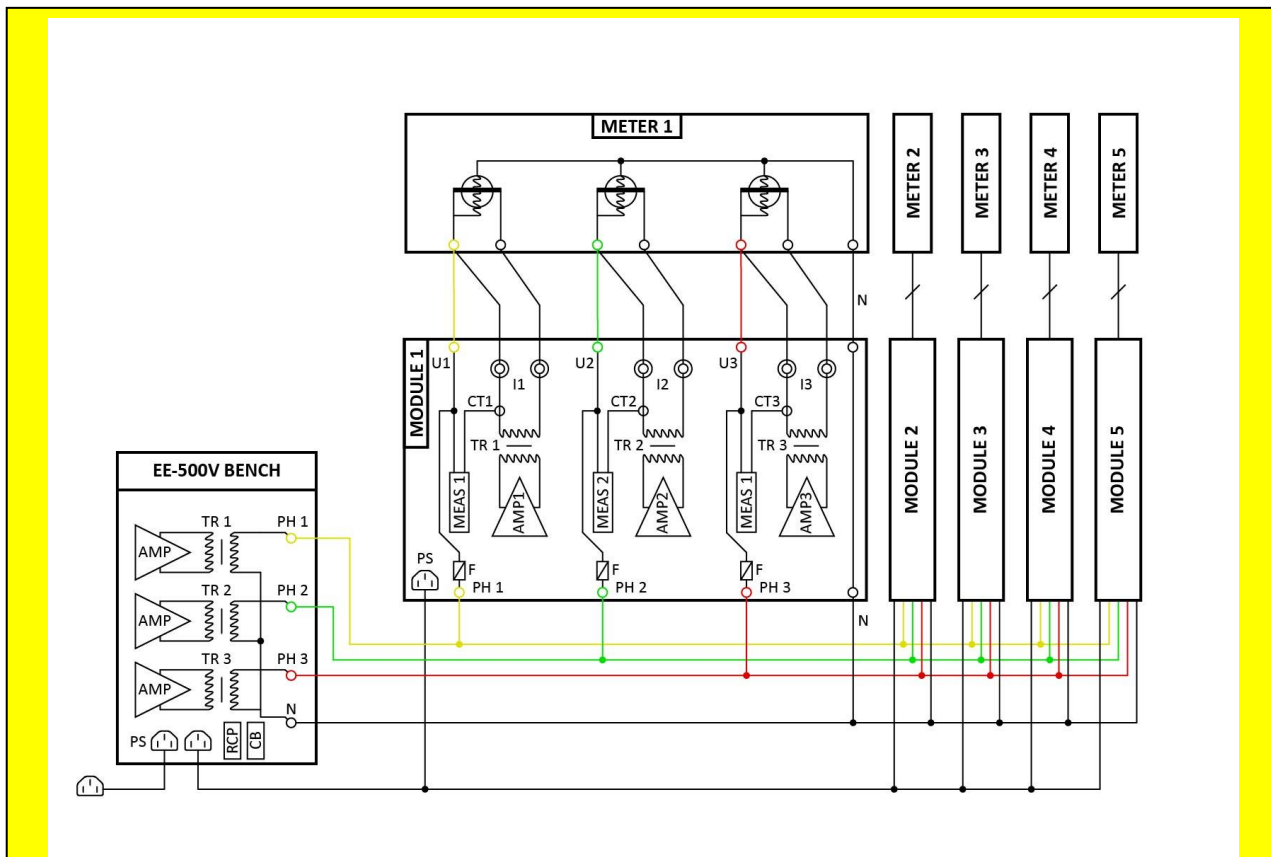
The Test Bench consists of the following components:

- A Three-Phase Voltage Generator EE-500 V for voltages up to 500Vac / 250VA;
- Five identical Modules EE-120A, each comprising three-phase current generators from 1 mA to 120A (60 VA each) and Energy Standard Class 0.04;
- Meter Suspension Rack with 5 positions for hanging the meter, Scanning Heads, Electronic Readers, Tariffs, Panic Button, Lamp;
- PC with EE Software for control, memorizing, search in Data Base and print of Reports.

### Advantages

- Meter Testing with closed U-I links, no need of Isolating CTs;
- Great Accuracy – class 0.04; No additional Error from ICTs or voltage drops;
- If a meter is missing, no need of re-connections, just switch off the Module;
- Very light, modular construction, easy for support.

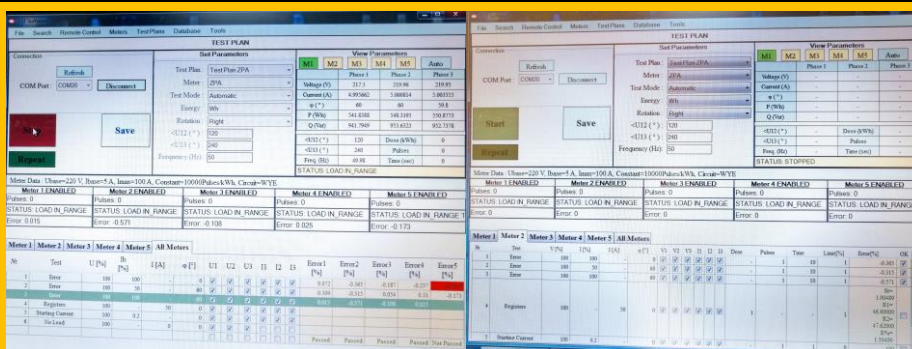
## Block Diagram of the Test Bench



**Abbreviations:** PS – Power Supply; RCD – Residual -Current Device; CB – Circuit Breaker;

AMP - Amplifier; TR – Transformer; MEAS – Measuring Unit; CT – Current Transformer; F - Fuse

## Software



The EE Software works under Windows, the latest versions, and has the following features:

- Control of five Modules EE-120A and one Module EE-500V;
- Automatic Test Plans with up to 200 pre-set Test Points;
- Memorize the Test Results in the SQL Data Base;
- Search by ID Number, Group, Date; Create Headers and Footers;
- Print Test Reports;
- Import / Export of Data Base or Test Plans

## Components of the Test Bench



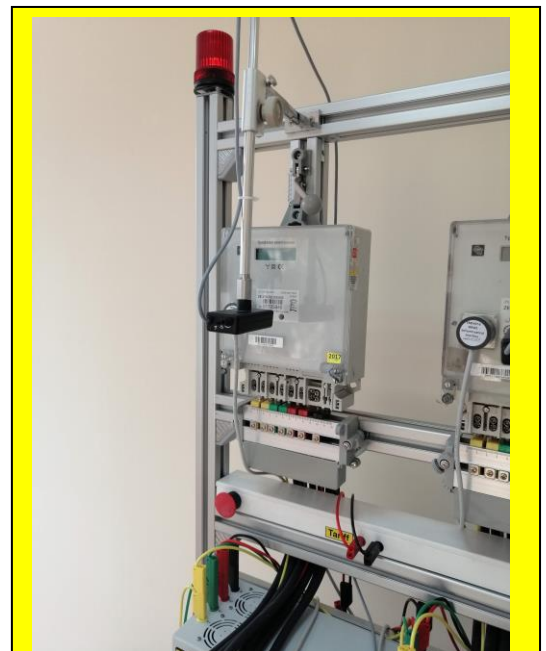
### EE-500V-3-BENCH

- Voltage generation to 500Vac / 250VA
- Power Supply for the Bench 1000VA
- Residual-current Device
- Circuit Breaker
- Voltage supply for the Tariffs & Lamp



### EE-120A-BENCH

- Current Generation 1mA ...120 A at 60 VA max;
- Energy Standard Class 0.04; active & reactive ;
- Switch with 8 positions for the Module No;
- Input for the pulses from the Head and BNC input for high-frequency pulses;
- Pulse Output ( $F_{out}$ ) proportional to Energy.



- Scanning Head with Mechanics;
- Electronic Head for the Registers;
- Tariff Sockets and Cables;
- Panic Button;
- Lamp;
- Bar-code Reader.

## TECHNICAL DATA

TST 3/5 - GENERAL		
Power Supply: 85 ... 265 Vac, 47...63 Hz	Operation Temperature Range: 0°C ... 40°C	
Power Consumption: max. 1800 VA	Relative Humidity: <95%, Non-condensing	
Overvoltage Category: 300V, Cat III	Safety Tests: IEC 61010-1: 2002	
Circuit Types: 4WY, 3WΔ, Single Phase	Measurement: Wh, VARh, U, I, φ, P, Q, S, PF	
Test Types: Error, Register, No-Load, Starting Current, Meter Constant, Pre-heating		
THREE-PHASE LOAD		
PARAMETER	CURRENT SOURCE EE-120A	VOLTAGE SOURCE EE-500V
Range	1mA ... 120A	30Vac ... 500Vac (Ph.-N)
Output Power	max. 60 VA per phase	max 250 VA per phase
Accuracy / Resolution	±0.04% / 0.1mA	±0.04% / 0.01V
Stability	<0.1% (in 1 hour)	<0.1% (in 1 hour)
Harmonic Distortions	<0.8%	<0.8%
Harmonics	From 1 to 19 <sup>th</sup> , 0...100%, 0...360°	From 1 to 19 <sup>th</sup> , 0..100%, 0..360°
Phase Shift	0.0° ... 359.9°, step 0.1°	0.0° ... 359.9°, step 0.1°
Frequency	45 ... 65Hz	45 ... 65Hz
Dimensions [HxLxW]	480x270x150 mm	450x600x300 mm
Weight [kg]	14.5 kg	35.8 kg
EE-120A – THREE-PHASE STANDARD		
PARAMETER	RANGE	ERROR
Voltage	30 ... 500Vac (Phase-to Neutral)	< ±0.04%
Current	0.04 ... 120A	< ±0.04%
	0.001 ... 0.04A	< ±0.04% *
Active Power / Energy	0.04 ... 120A	< ±0.04%
Reactive Power / Energy	0.04 ... 120A	< ±0.06%
Frequency	40 ... 100Hz	0.01Hz
Temp. Coefficient	0°C ... 40°C	< 0.002 %/K
METER SUSPENSION RACK		
Dimensions: HxLxW 1900 x 1520 x 520 [mm]	Weight:	52 kg
Material: Aluminum Profiles	Protection:	Panic Button

\*Error related to the maximum value of the range.

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