

TS 120/3

THREE-PHASE ELECTRICITY METER TEST SYSTEM

APPLICATION AND BRIEF DESCRIPTION

The TS 120/3 test system consists of a regulated three-phase phantom load and a three-phase class 0.05 energy standard, incorporated in one case.

The test system is designed to operate in a laboratory and can be used independently for adjustment and verification of one or more electricity meters.

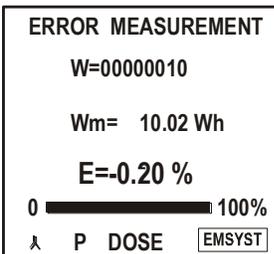
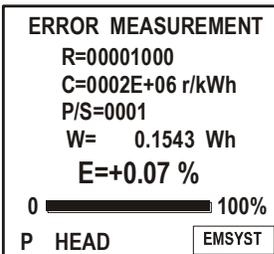
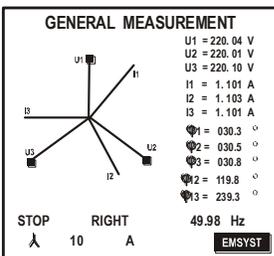
The system enables to verify single-phase or three-phase electricity meters for active, reactive or apparent energy.

TS 120/3 is controlled from the front panel keyboard, but can be also controlled from a computer via RS 232. When computer available, a completely automatic mode can be effectuated with preliminarily assigned tests like Error, Register test, Starting current and No-load test.

The test system – computer dialogue is described in details and is at user's disposal, which enables to develop own programmes.

With the system, a scanning head is also offered along with positioning mechanics.

The scanning head can read the Ferraris type meter disc revolutions, as well as the static meters pulses.



FUNCTIONAL SPECIFICATION OF THE LOAD

- Generates a digitally synthesized three-phase voltage- and current system
- The magnitude and the phase-shift of the generated signals are assigned separately for each phase, or for all three phases
- The frequency and the phase sequence can also be changed
- There is a possibility of harmonic generation
- Overload and short circuit protection is provided
- Analog feedback available, which ensures great stability of the generated signals
- High efficiency – over 90%

FUNCTIONAL SPECIFICATION OF THE STANDARD

- Measures the numerical values of the generated voltages, currents, phase shift, powers, $\cos \phi$, frequency, etc.
- Measures the electricity meter error – for active, reactive or apparent energy
- Measures the register error, dosing the energy generated by the load
- Supports link with a computer via RS 232

TECHNICAL SPECIFICATION

General Technical Specification

• Power supply (single phase)	90V ÷ 275V, 50/ 60 Hz
• Power consumption	800VA max
• Weight	45 kg
• Dimensions	700 x 440 x 270 mm
• Operating temperature	0°C ÷ 45°C
• Relative humidity	< 90% non-condensing

Technical specification of the load

• Parameters of the generated 3-phase voltage	
- Range (phase-neutral of each phase)	30V ÷ 300 V eff
- Assigned increment	0.1V
- Accuracy	< 0.2%
- Stability	< 0.1% in a min
- Non-linearity factor	< 1%
- Output power	100VA
• Parameters of the generated 3-phase current	
- Range (with internal sub-ranges)	0.001 ÷ 120A
- Assigned increment	0.001A
- Accuracy	< 0.2%
- Stability	< 0.1% in a min
- Non-linearity factor	<1%
- Output power	150VA
• Phase shift	
- Range	0° ÷ 360°
- Assigned increment	0.1°
- Stability	< 0.2°
• Output frequency	
- Range	45 Hz ÷ 65 Hz
- Assigned increment	1 Hz
- Stability	< 0.03 Hz

Technical Specification of the Standard

• Voltage range	30V ÷ 300V (phase – neutral) – class 0.05
• Current range	0.02A ÷ 120A – class 0.05
• Power/energy error	± 0.05 [%] (I = 0.05A ÷ 120A)
for class 0.05 standard	± 0.1 [%] (I = 0.015 ÷ 0.049A)

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