# • MTS-MONO-ME •

## Portable test systems

### Accuracy class 0.05 National Registry Number 89778-23

### Measurement. Generation and voltages (for «-K» model)

| Parameter | Model | | |
|---|---|---|---|
| | **3.120** | **1.120** | **3.12** |
| AC current | 3 x 1mA ÷ 120 A | 1 x 1mA ÷ 120 A | 3 x 1mA ÷ 12 A |
| Voltage | 3 x 1 V ÷ 500 V | 1 x 1 V ÷ 300 V | 3 x 1 V ÷ 300 V |
| Harmonics | up to 50 | | |
| Interharmonics | up to 50.5 | | |
| DC current and voltage | ±30 mA; ±15 V | | |



### 1. MTS-MONO-ME 3.120

For single and three phase meters with direct and transformer connection



### 2. MTS-MONO-ME 1.120

For single phase meters with direct connection



### 3. MTS-MONO-ME 3.12

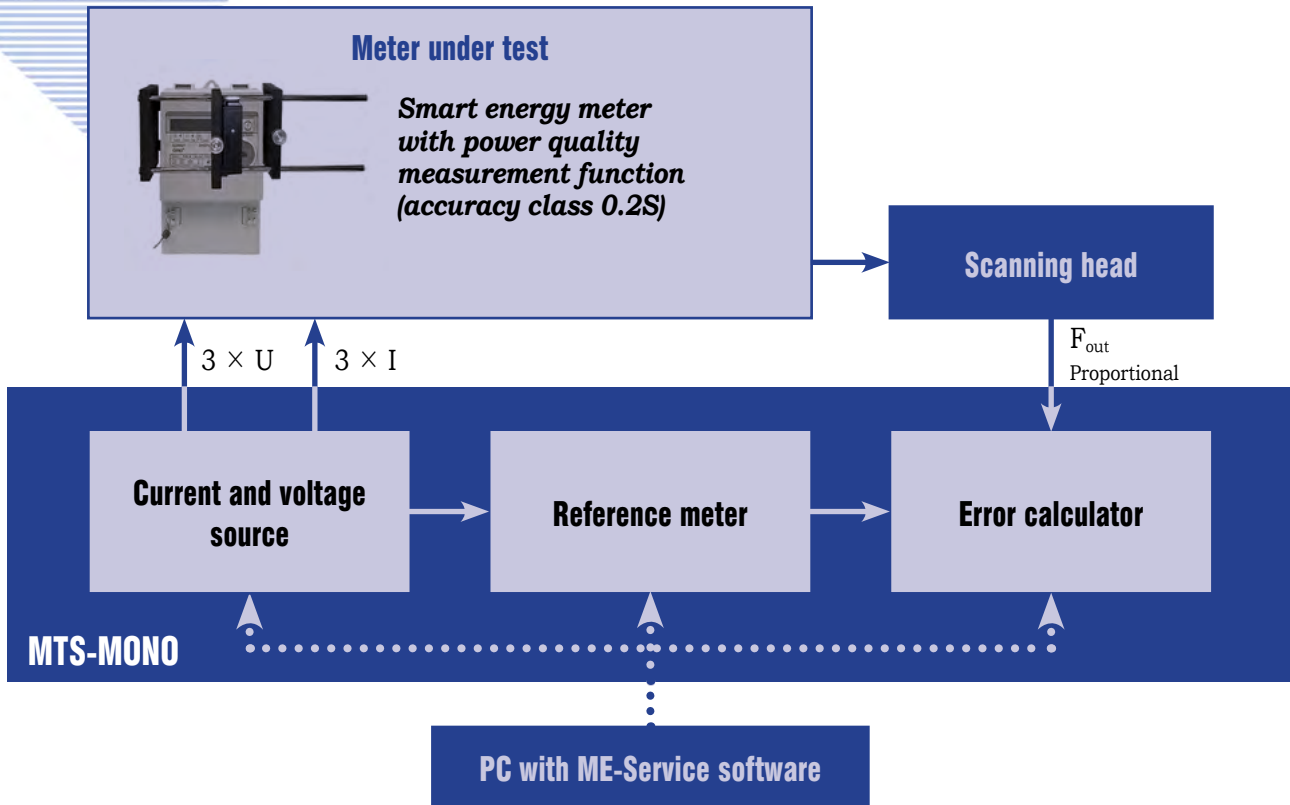For single and three phase meters with transformer connection



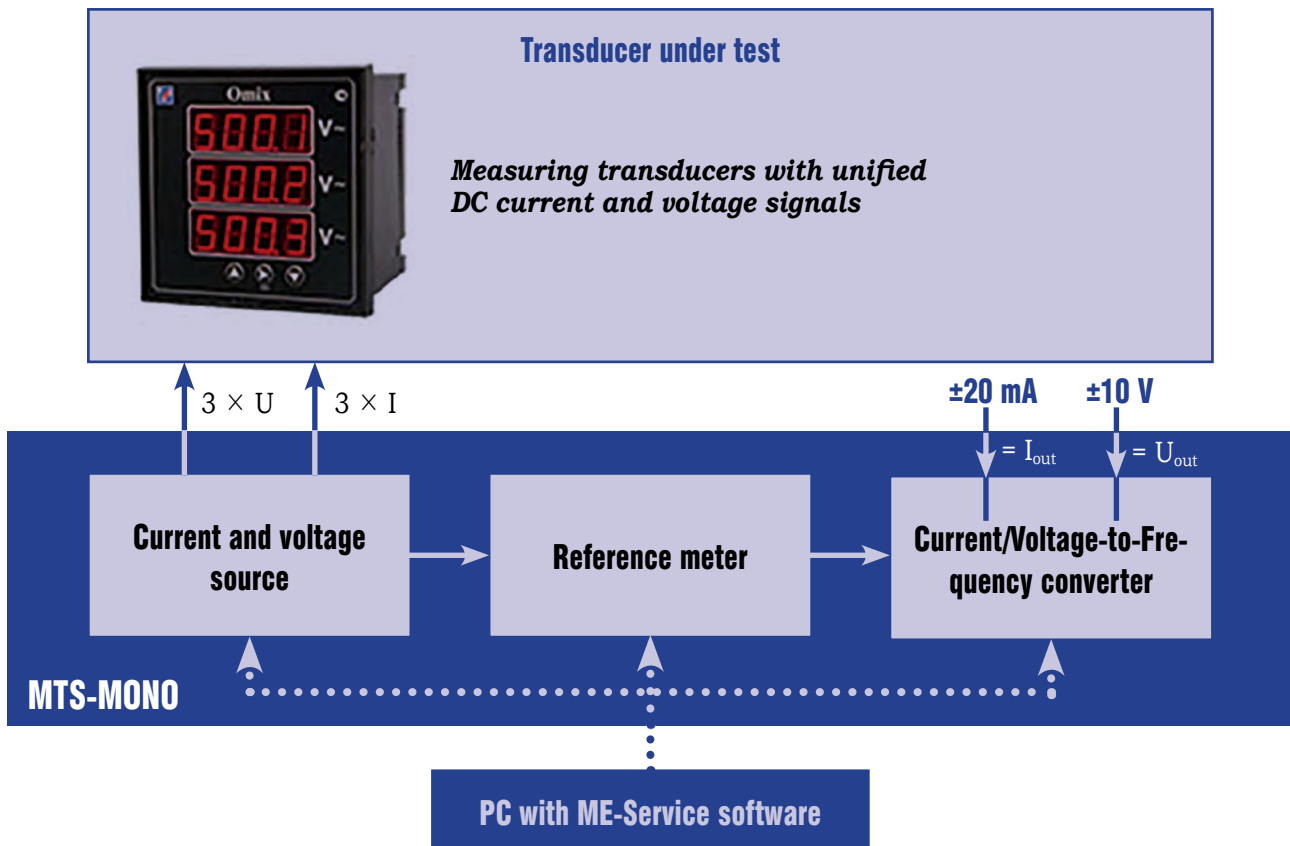**ME-Service software controls the test system in automatic mode**

# Versatile applications

## Configuration for testing energy meters

**Meter under test**

*Smart energy meter with power quality measurement function (accuracy class 0.2S)*

**Scanning head**

$F_{out}$
Proportional

$3 \times U$    $3 \times I$

**MTS-MONO**

**Current and voltage source**  →  **Reference meter**  →  **Error calculator**

**PC with ME-Service software**

## Configuration for testing measuring transducers (for «-K» model)

**Transducer under test**

Omix

*Measuring transducers with unified DC current and voltage signals*

$3 \times U$    $3 \times I$

±20 mA    ±10 V

$= I_{out}$    $= U_{out}$

**MTS-MONO**

**Current and voltage source**  →  **Reference meter**  →  **Current/Voltage-to-Frequency converter**

**PC with ME-Service software**

# Benefits
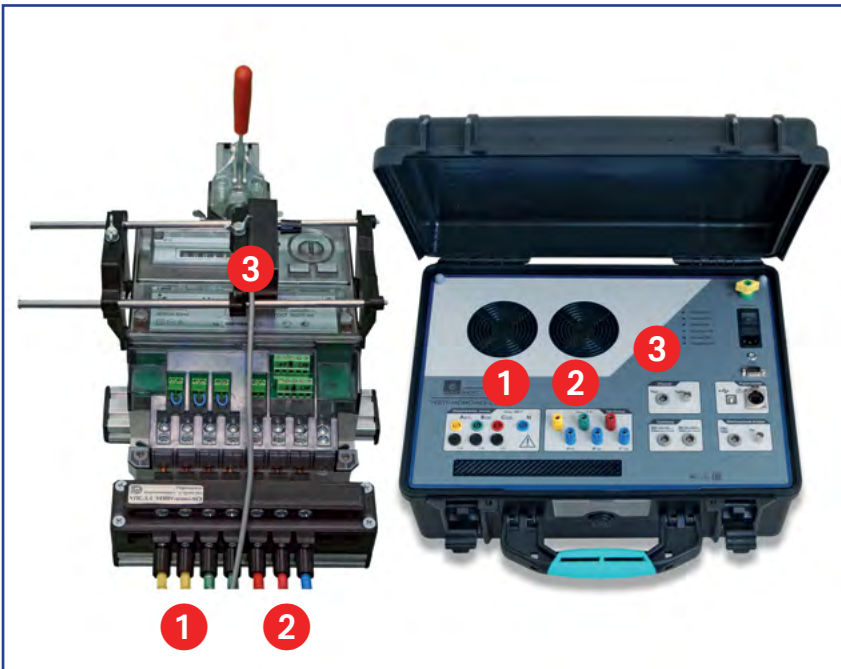


Meter connection time is minimized

There are just 3 commmunication links to be made:

❶ Voltage

❷ Current

❸ Pulse signam (with a scanning head)

and one action to be done: you need to run the ME-Service program for performing automatic testing and report generation

*Meter information is enetred into the database in advance*

# Accessories



### Quick Meter Connection device with plug-in Current and Voltage modules

for connecting current and voltage signals to the meter



### Scanning Head

Scanning heads for testing induction meters or meters with optical output



### Time correction module TCM-02C with built-in GLONASS

for syncronization of the computer clocks to the UTC (SU) time standard



### Calibrated Coils KT series

10/20/100/200/300/ Turn Coil Adapters designed for testing of measuring instruments together with the contactless current sensors (clip-on CTs of various types)

## Technical specifications for reference meters
(accuracy class 0,05)

| Parameter | Range | Measurement error |
|---|---|---|
| Voltage* Ranges $U_{nom}$ = 60, 120, 240 V, (480 V) | ① 3...576 V | % of reference ±0.02 % + Δ |
| | ② 6...288 V | |
| | ③ 6...288 V | |
| Current* Ranges $I_{nom}$ = 0.1, 1, 10 A, (100 A) | ① 1 mA...120 A | % of reference ±0.02 % + Δ |
| | ② 1 mA...120 A | |
| | ③ 5 mA...12 A | |
| Frequency | 40...70 Hz | Absolute ±0.002 Hz |
| Phase angle | −180°...+180° | Absolute ±0.01° |
| Power factor | −0.1...+0.1 | Absolute ±0.02 |
| Active power | $0.01 U_{nom}...1.5 U_{nom}$ $0.1 I_{nom}...1.5 I_{nom}$ | % of reference ±0.05 % + Δ |

Δ – additional error

## Current and voltage source parameters

| Parameter | Range | In increments of | Value |
|---|---|---|---|
| Voltage* Ranges $U_{nom}$ = 60/220 V Distortion Max output power per phase | ① 3...600 V | 0.01 V | ≤1 % 30 VA |
| | ② 3...300 V | | |
| | ③ 20...300 V | | |
| Current* Distortion Max output power per phase | ① 1 mA...120 A | 0,1 mA | ≤1 % 60 VA |
| | ② 2,5mA...120 A | | |
| | ③ 1 mA...12 A | | |
| Frequency | 45...70 Hz | 0.01 Hz | |
| Phase angle | −180°...+180° | ±0.01° | |

*Voltage and current harmonic composition*

| Harmonics | 2...50 | | |
|---|---|---|---|
| Interharmonics | 0.5...50.5 | | |

## Pulse input/output parameters

| Parameter | Input | Output |
|---|---|---|
| Pulse level | 5...15 V | 5 V |
| Frequency (max) | 36 kHz | 18 kHz |
| Pulse duration | >14 μs | 10 ± 2 μs |
| Constant | 1...999 999 999  pulse/(kW • h) | $C = 144 \cdot 10^8 / (I_{nom} \cdot U_{nom})$ pulse/(W • h) |

\* ①②③ – MTS-MONO-ME models: 1 - «3.120», 2 - «1.120», 3 - «3.12».

## Error calculator and Volt/mA calibrator parameters (for «-K» model)
(accuracy class 0.02)

| Parameter | Range | Measurement error |
|---|---|---|
| *Input* | | % of reference |
| DC Voltage | −15...+15 V 0...15 V | ±0.03 % |
| DC Current | −7.5...+7.5 mA 0...30 mA | ±0.05 % |
| *Output* | | Absolute |
| DC Voltage | −10.5...+10.5 V | ±0.002 V |
| DC Current | −24...+24 mA | ±0.005 mA |

## Operating conditions

| | |
|---|---|
| Ambient temperature | 10 to 35 °C |
| Relative humidity | up to 80 % at 20 °C |
| Atmospheric pressure | 84 to 106,7 kPa |

## General specifications

| Parameter | Value |
|---|---|
| Mains supply | $230^{+23}_{-35}$ V, 47...63 Hz |
| AC power consumption | 400 VA, or less |
| Dimension* (length × width × height) | ① 218 × 423 × 546 mm, or less |
| | ② 170 × 330 × 405 mm, or less |
| | ③ 195 × 390 × 478 mm, or less |
| Weight* | ① 25 kg, or less |
| | ② 12 kg, or less |
| | ③ 18 kg, or less |