

## COM5003 – Precision is getting a new face.

As a part of the high precision instrument series with highest accuracy class ZERA presents the three-phase comparator with new innovative digital technology, extended features for measurement and accuracy of 50 ppm. By using a Linux surface all menu items are accessible very quickly. Data, measurements and individual creation of measuring tasks as well as its visualization are selectable via capacitive touch-screen.

### Multi-functional Precision Instrument

- Simultaneous energy measurement in four measurement modes
- Power measurement at alternating energy direction
- Simultaneous error measurement with up to four pulses of DUT
- Active impedance compensation at currents  $\leq 100$  mA
- Operation via capacitive touch-screen
- Traceability of measurement accuracy by connection of DC- and frequency standard
- Remote control

### General Features

- Highest accuracy in its class (0.005 %)
- Excellent long-term stability
- Automatic measuring range selection
- More dynamic due to individual selection of current and voltage ranges per phase.
- Wide-range current input for measurements from 1 mA ... 160 A

### Function Overview

- Actual value measurement
- Vectorial display
- Curve display
- Harmonic measurement
- Error measurement
- Reference measurement
- Easy implementation of further measuring tasks



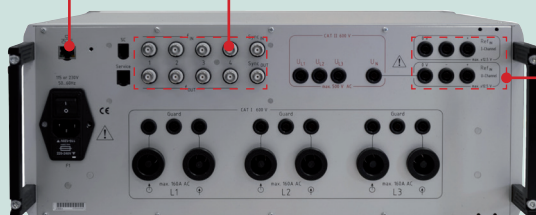
### Primary Standard Class 0.005



Ethernet connection

4 frequency inputs/outputs for error measurement

Reference inputs I channel/U channel



## COM5003 – Technical Data

### General

Power supply	115 V / 230 V +/-15 %, 50 ... 60 Hz
Power consumption	max. 200 VA
Temperature range, operation	+5° ... + 45° C
Temperature range, storage	-15° ... + 65° C
Relative humidity (not condensing)	max. 95 %
Dimensions (DxWxH)	47 cm x 45 cm x 20 cm
Weight	~ 25 kg



### Safety

IP class according to DIN EN 60529	IP40
Declaration of conformity	CE conform
Protection class according to DIN EN 61140	I

### Reference meter

Measuring modes	2-, 3-, 4-wire active-/reactive/apparent power
Fundamental frequency	15 ... 70 Hz
Bandwidth	3 kHz
Sampling	24 bit 504 samples / period
Accuracy class for power/energy 3) 4)	0.005 %
Angle measurement accuracy 3) 4)	< 0.001°
Frequency measurement deviation	± 0.01 Hz

### Voltage measurement

Voltage measurement	100 mV ... 580 V
Voltage range(s)	480 V, 240 V, 120 V, 60 V, 12 V, 5V
Voltage channels input impedance (@ range)	478 kΩ @ 480 V ... 5 V
Voltage measurement accuracy 3) 5)	< 25 x 10E-6 @ 30 V ... 480 V < 50 x 10E-6 @ 1 V ... < 30 V
Voltage measurement temperature drift 3)	< 0.5 x 10E-6 / K
Voltage measurement standard deviation 1)	< 1 x 10E-6
Voltage measurement long term stability 2) 3)	< 15 x 10E-6 / year

### Current measurement

Current measurement	0.5 mA ... 160 A ~
Current range(s)	160 A, 100 A, 50 A, 25 A, 10 A, 5 A, 2.5 A, 1 A, 0.5 A, 0.25 A, 0.1 A, 50 mA, 25 mA, 10 mA, 5 mA
Usage of ranges	10 ... 120 %
Current channels input impedance (@ range)	< 4 mΩ @ 160 A ... 25 A < 40 mΩ @ 10 A ... 2.5 A < 2 Ω @ 1 A .. 0.25 A < 5 Ω @ 0.1 A .. 5 mA (compensated)
Current measurement accuracy 5)	< 25 x 10E-6 @ 50 mA ... 160 A < 50 x 10E-6 @ 10 mA ... < 50 mA < 100 x 10E-6 @ 1 mA ... < 10 mA
Current measurement temperature drift	< 0.5 x 10E-6 / K / year
Current measurement standard deviation 1)	< 1 x 10E-6 / year
Current measurement long term stability 2)	< 15 x 10E-6 / year

### Power measurement

Power/energy measurement accuracy 3) 5) 6)	< 50 x 10E-6 @ 50 mA ... 160 A < 100 x 10E-6 @ 10 mA ... < 50 mA < 180 x 10E-6 @ 1 mA ... < 10 mA
Power/energy measurement temperature drift 3) 4)	< 1 x 10E-6 / K
Power/energy measurement standard deviation 1) 3) 4)	< 2 x 10E-6
Power/energy measurement long term stability 2) 3) 4)	< 30 x 10E-6 / year

1: Standard deviation over 10 measurements with integration time 6 s

03.09.2015

2: Stability over 1 year (every month one measurement over one hour)

3: From 30 V ... 480 V

4: From 50 mA ... 160 A

5: Related to the read value at optimum range selection

6: Related to the active power with power factors from 1 to 0.5 i and from 1 to 0.8 c

Subjects to alteration.

