COMPANO 100

Primary injection, secondary injection and basic protection test set

Multifunctional device for basic testi

Challenging commissioning and re-commissioning tasks

During the commissioning of protection systems there are literally hundreds of connections that have to be verified. Whether it's for primary or secondary injection, having the right equipment and the right procedures can speed up those tests drastically. Including the relays in some of the wiring checks can be a very smart approach.

Maintain your mobility

COMPANO 100 is the universal and easy to use solution for all types of basic and quick wiring and polarity checks, burden measurements, basic protection testing and ground system checks.

Due to its light weight (only 10 kg / 22 lbs), small size and rugged design it's predestined for use in substations, railway systems, industry or renewable energy generation facilities.

* Up to 750 V AC with optional booster VBO4

ng in electrical energy systems

Electronic sources

Controlled electronic outputs allow you to obtain the exact value you desire. The accuracy is even very high for small values. In addition, the electronic sources can output signals with variable frequencies and other signal forms, automated ramps, pulse ramps and of course pure DC.

Battery operated

COMPANO 100 is mains independent due to its unique battery operation. This enables the user to perform tests at remote locations for several hours without the need of a mains supply.

Polarity check signal generation

COMPANO 100 enables quick setup for wiring checks. A special electronically generated DC free test signal allows easy polarity checks throughout the station within minutes.

Comprehensive testing functionality

Whether the sources are AC or DC, COMPANO 100 can run various output signal forms. The highly flexible inputs are configurable, for example as

- wet or dry binary inputs,
- AC or DC voltage inputs with different filters (fast, accurate or frequency selective) and
- current inputs using external shunts or clamps depending on the user's needs.

A high precision timer can be configured to start or stop the measurement process based on various events.

Each function can be combined with one of the others in a useful manner, e.g. to calculate real power from the output current and a voltage input, making COMPANO 100 an incredibly flexible tool for today's tasks and future applications.

Your benefits

- Accurate output of desired value
- Run complex predefined sequences and ramps
- Polarity check signal generation for quick setup of wiring tests
- Runs without mains power supply for several hours
- High versatility
- Portable due to light weight

omicronenergy.com/COMPANO100

Industries and testing applications

Railways

Remote test objects need mains independent test sets.

- Variable frequencies and DC
- Internal power source by battery
- Basic protection testing
- Micro-ohm measurements

Equipment manufacturers

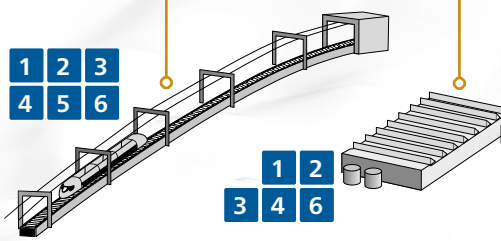
Manufacturing processes often require devices for fast, individual and frequently changing tests.

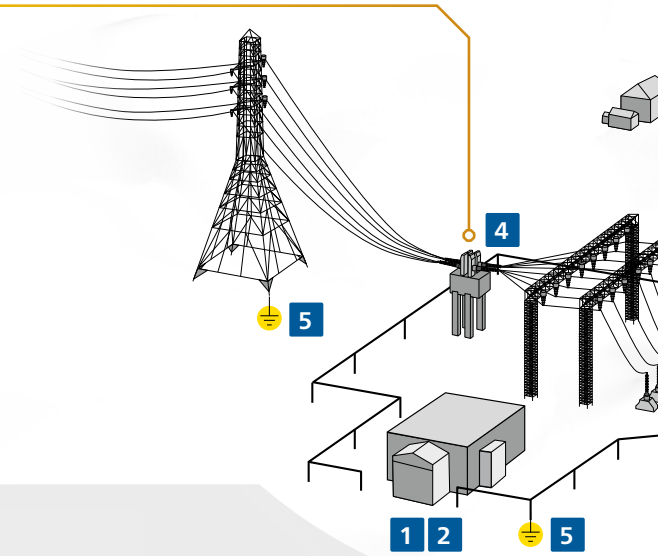
- An ideal solution for small lot sizes for example, Ring Main Units (RMU)
- Large number of functions within one device
- Protection tests and micro-ohm measurements

Utilities

Utility applications need high flexibility for various applications. COMPANO 100 offers:

- Wiring checks and burden measurements with primary and secondary injection
- Polarity checks
- Basic relay and fault detector tests





Testing applications with COMPANO 100

1 Single-phase protection relay testing

COMPANO 100 is the ideal solution for a wide range of one-phase current or one-phase voltage testing for protection devices.

2 Burden measurements

COMPANO 100 checks and verifies the burden of instrument transformers to avoid serious problems of over- or underburdened instrument transformers.

3 Wiring checks and polarity checks

COMPANO 100 provides the fastest and easiest way to verify the wiring in substations and to check the polarity, even without mains supply.

Industries

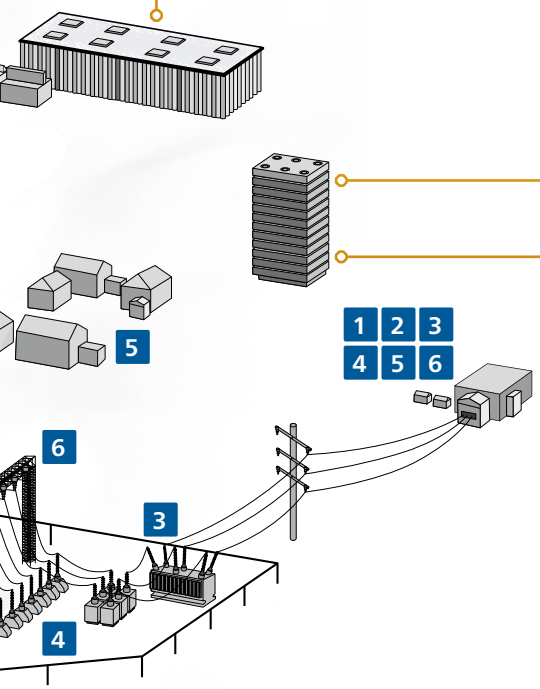
These environments require easy to use test sets with outstanding capabilities.

- > High current and variable voltage generation
- > Easy protection relay tests
- > Ductor testing

Service providers

A maximum of testing capabilities should be provided by a single piece of equipment.

- > Most versatile basic test set on the market
- > A small, lightweight, easy to transport device
- > Applications such as:
  Primary or secondary injection, continuity checks with high currents and grounding system checks



Rental

Ease of use and versatility is a must when there are multiple users.

- > Startup without specific training
- > Various different applications such as:
  Primary or secondary injection, basic relay tests, continuity checks with high currents, grounding system checks

4 CT / VT ratio checks

COMPANO 100 generates a frequency-variable sine wave signal to check CT and VT ratios and takes frequency selective measurements.

5 Grounding measurements

COMPANO 100 allows a fast and reliable check of ground impedance, step- and touch voltages and soil resistivity.

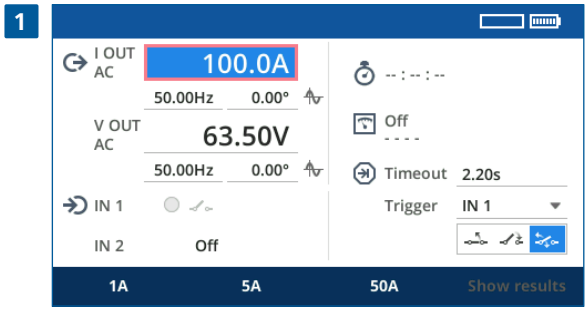
6 Micro-ohm resistance testing

COMPANO 100 is also a portable and battery operated high precision ohmmeter which can measure all the way down to micro-ohms.

Efficient and ergonomic operation

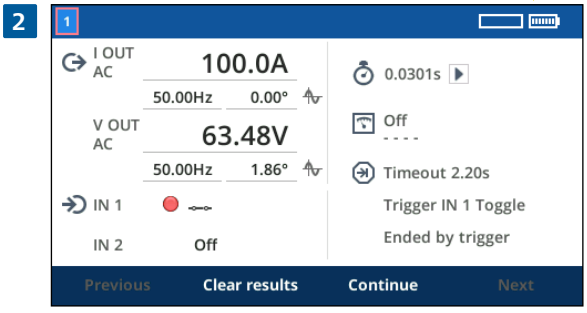
COMPANO 100's ease of use is based on its very intuitive software. It's functionality and operation structure are developed in close co-operation with our customers.

Example: QUICK test of overcurrent protection



QUICK test setup

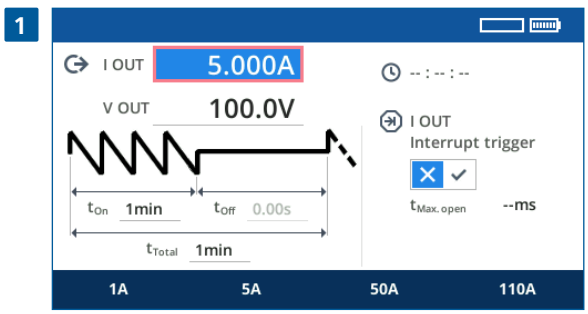
Set output quantities up to 110 A or 150 V AC and choose between various different trigger criteria such as binary inputs or overload to automatically end the test.



QUICK results

Perform test shots at different output values and easily assess the results and compare them with the relay's nominal characteristic.

Example: Setup polarity check signals



Polarity check

Simply setup polarity check signals to evaluate wiring tests within minutes. Define active- and pause times to save power. Polarity checks are possible for voltage and current paths.

Example: Testing automated pickup value of an overcurrent protection

Define states

Define your first state in a very easy and logical way. Use timeout to define the pre-fault duration.

Pulse ramp definitions

Choose between intuitive transitions for the changeover of the states:

- Step change
- Ramp
- Pulse ramp

Define ramp's end value on a third page.

Results view

After running the test the results of all states can be viewed and stored on a flash drive.

Your benefits

- Test quickly and easily
- Easily define sequences and ramps
- Obtain the output magnitudes as they were set in the user interface
- Generate polarity check signals

Application modules for COMPANO 100

Modules for different applications guarantee ease of use. The modules used most frequently can be reached by pressing a single key.

QUICK

General purpose module for various applications. It can output magnitudes and measure back at the same time. It is possible to modify the quantities and phases generated while the outputs are active. Functions like switching off/on triggers, switching off/on time-out or calculating results such as real power or impedances from other measured quantities are possible.
(Included in all packages)

Testing distribution grids is made easy with COMPANO 100.

FLEX

Allows you to program sequences in advance that consist of states, ramps, pulse ramps or combinations of them that you can then run as programmed. Changes between the individual sequence steps can be triggered from internal timers, external events such as binary inputs or output overloads. The ability to repeat the sequence at the end of the sequence makes it flexible, especially when it comes to creating endless loops.

Polarity check

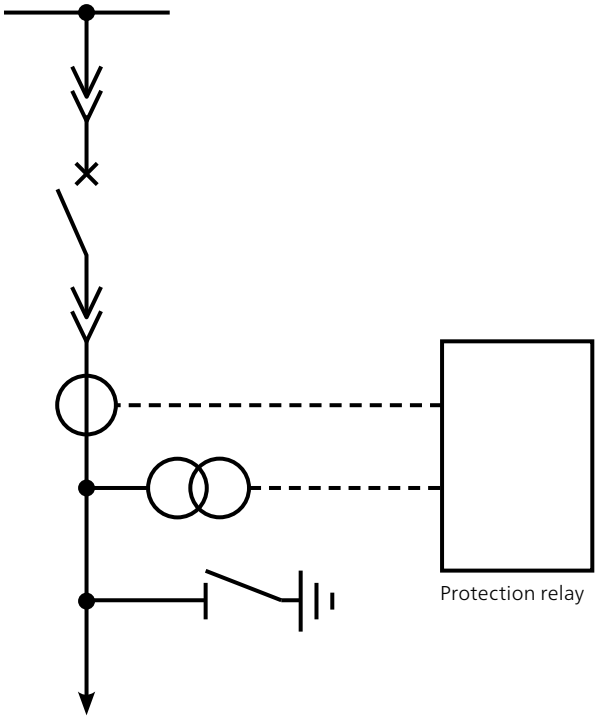
Allows asymmetric signal generation that is free from any DC component. By using a hand-held polarity checker (CPOL3) it is possible to distinguish whether the polarity is correct or not – even without a connection back to the COMPANO 100. The signal is DC free which for instance, avoids any DC magnetization and remanence in the core of CTs in the path.

Micro-ohm

This module allows the COMPANO 100 to be used as a micro-ohmmeter for applications where there are no inductances such as CTs in the measurement path. In this mode, special hardware is activated to filter out system frequency noise.

Application example*

COMPANO 100 is designed to be easy to use and versatile. Here is just one example that shows how it is used in distribution grids:



For tripping currents lower than 110 A, it is possible to test the complete chain from the primary site of the current transformer to the contacts of the circuit breakers.

1. Instrument transformer testing

Check polarity and ratio of current transformers and voltage transformers with ease.

2. Wiring checks

Check the secondary wiring. Either by measuring with COMPANO 100 or use the CPOL3 hand held polarity checker for more comfort and efficiency (see page 14).

3. Protection testing

Perform single phase protection tests on over-current relays. An independent current and voltage source with a freely adjustable phase angle even allows you to test directional and distance protection. Voltage and frequency protection can also be tested.

4. Circuit breaker testing

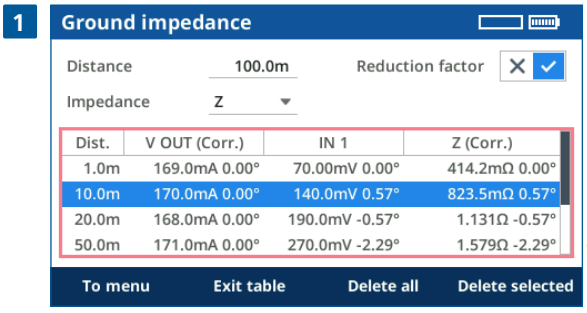
Use the integrated timer to measure the open and closing times of circuit breakers. Additionally, the resistance of the breaker contacts can be tested with the Micro-ohm function.

* Example taken from OMICRON Academy.
More information on our training courses on page 19.

Grounding system testing

COMPANO 100 grounding measurements follow a guided workflow. The clear instructions and the graphical representation are unique in this field, making these measurements easier than ever before.

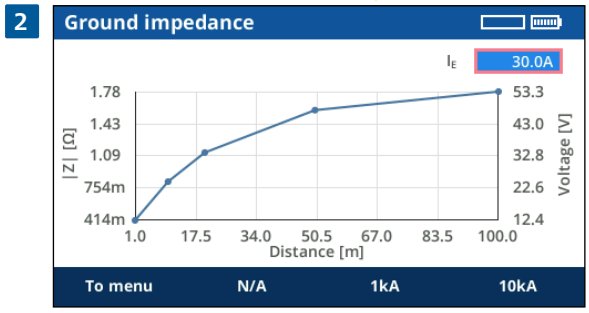
Guided workflow



Ground impedance

The guided workflow shows all the steps required for performing the measurement. All the parameters are set automatically, but may also be configured manually.

The results are shown as a table with all the relevant information. It is also possible to apply the current reduction factor directly.

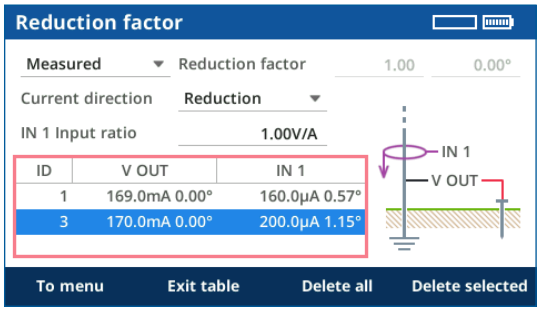


Results can be checked on the display immediately. It is also possible to specify a current to earth to visualize the related ground potential rise directly.

If necessary, single measurements can be repeated or deleted individually.

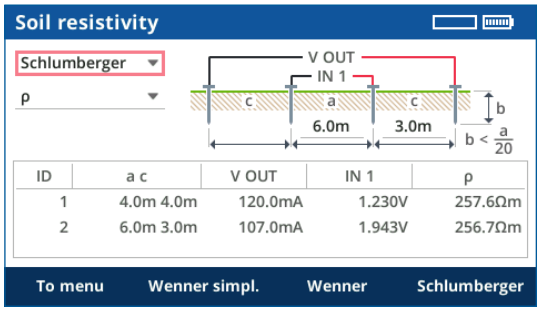
Clear visualization of results

Testing the grounding system with COMPANO 100 is as easy as it gets. The guided workflow leads to clearly depicted final results – without the need for a calculator.



Integrated measurement and calculation of the current reduction factor.

Live screenshots from real measurements.



Direct calculation of the soil resistivity using the Wenner or Schlumberger method.

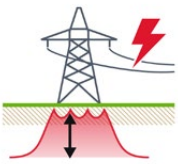
Grounding system application modules

GROUNDING SYSTEM

COMPANO 100 offers four specific modules for testing grounding systems[1]. They allow you to measure the soil resistivity as well as ground impedance, continuity and step and touch voltages.

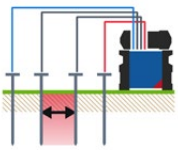
These measurements are required for planning a station, confirming the design calculations of a new station or for reconfirming the condition of existing stations. In areas where people are often barefoot, such as next to playgrounds, schools and recreational areas, it's especially important to check the conditions of the grounding system of medium and high voltage stations and transmission towers periodically.

Ground impedance



This application module allows you to measure the impedance between the grounding system and reference earth. This type of measurement is also referred to as Ground Potential Rise (GPR), Fall-of-Potential (FoP) or 3-probe-method.

Soil resistivity

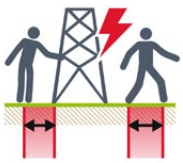


The Soil Resistivity Test (SRT) is performed prior to the construction of a grounding system. Based on these test results, the grounding system is designed to meet all the required criteria. It is also referred to as 4-probe-method.

Continuity (micro-ohm)

Improper construction work and deterioration can be detected with micro-ohm measurements. This test ensures that all components of the grounding system are properly connected.

Step- and touch voltage



This application module allows you to use COMPANO 100 as a source for the hand held FFT voltmeter HGT1.

It also allows you to perform step- and touch voltage measurements comfortably without connecting a cable to COMPANO 100.

Your benefits

- Guided workflow
- Calculation of results at mains frequency (e.g. 50 or 60 Hz)
- Performs calculations for current reduction factor and Wenner/ Schlumberger method
- Highly selective digital filtering
- Store results on flash drive

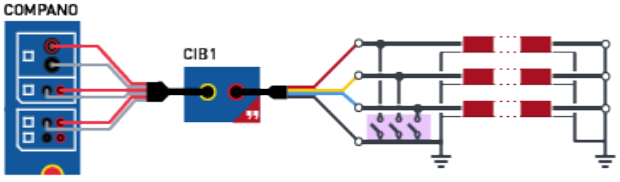
[1] COMPANO 100 is best suited for small and isolated grounding systems of an extent up to 30 m / 100 ft. For larger grounding systems, OMICRON CPC 100 + CU1 is the recommended solution.

Cable measurements with CIB1

Accurate impedance values are essential for relay parameterization in protection systems and load flow calculations. For example, measurements provide precise data for zero-sequence impedance values or older or extended cable systems that no longer have reliable data.

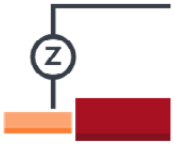
Using COMPANO 100 with the CIB1 accessory and the cable impedance application module makes measuring these impedances safe and easy. The intuitive and guided workflow enables measurement efficiency. The system is suitable for cables and short medium-voltage overhead lines up to 10 km (6 mi)*.

The line is grounded on the remote end for the measurement. A test current is then injected into various conductor loops, which are automatically switched in the CIB1 during the measurement. In case of overhead lines, the GP GB1 surge arrestor accessory box can be used to provide additional safety.

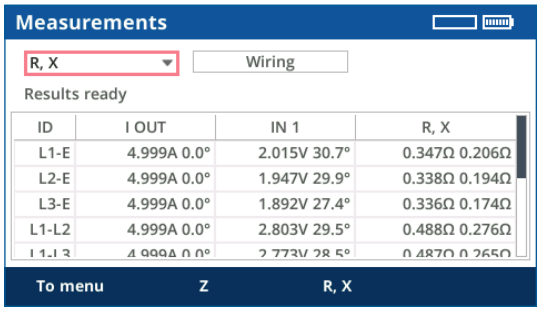


Measurment setup with COMPANO 100 and CIB1

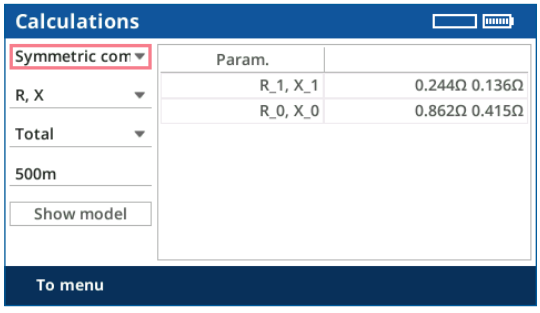
Cable impedance application module



Module for the impedance measurement and integrated result calculations. It includes positive sequence Z_1, zero sequence Z_0 and earth impedance Z_E, various line models and k-factors. Can also be used to measure single phase cables.



Measurement results per measured current loop



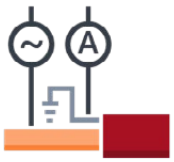
Calculation results for the symmetric system impedances

* For overhead lines, lines with overhead line sections or live parallel systems, the surge arrester unit CP GB1 is required in addition to the CIB1. For longer lines, OMICRON offers the CPC 100 + CP CU1 testing solution.

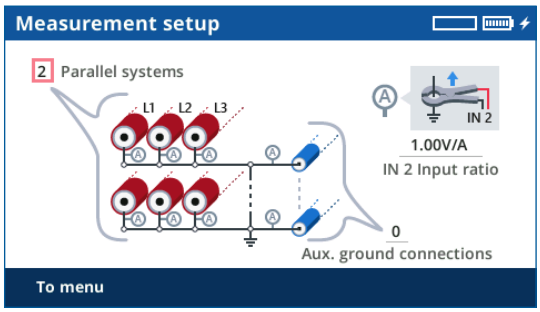
In single-core cable systems with shields grounded at both ends, which are often used in industrial applications, the physical cable arrangement can lead to unequal shield current distribution. Multiple parallel systems can exacerbate unequal distribution depending on the cable arrangement.

Combining COMPANO 100 with the CIB1 accessory and the cable shield current application module allows you to measure the shield current distribution in these systems. The system is suitable for cable systems up to 10 km (6 mi).

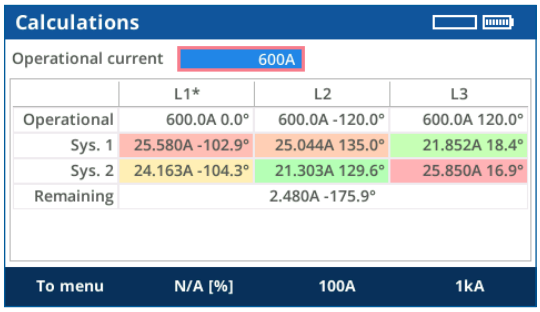
Cable shield current application module



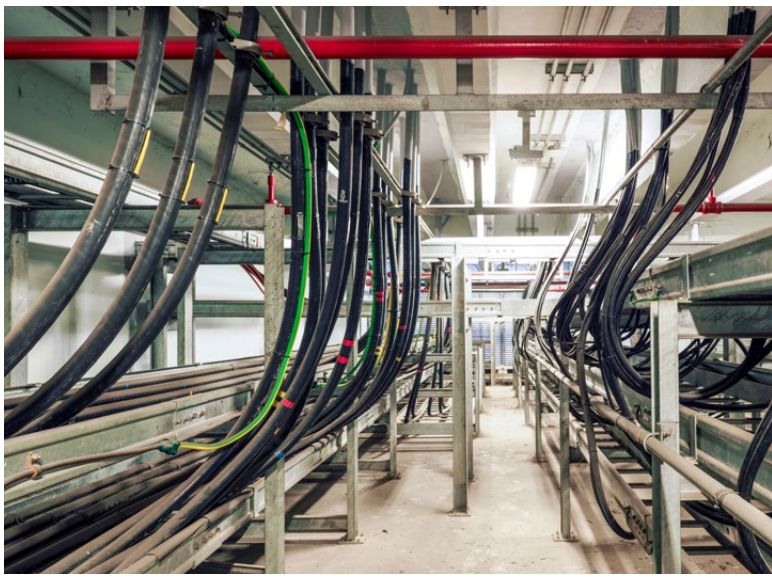
Module for measuring cable shield currents at single-core cables. Supports up to 9 parallel systems and auxiliary ground connections. It has integrated calculation of expected currents for symmetric three phase applications. This helps to detect unbalanced current distribution and potential overloading of cable shields. Can be also used to measure single phase cables.



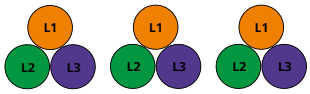
Setup for parallel single-core cable systems
(Optional with auxiliary ground connections)



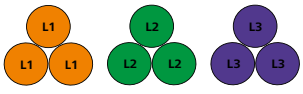
Exemplary results of four single-core cable systems
(Current via ground is also calculated)



In extreme cases, the arrangement of the cables can lead to overloading of the cable shield and subsequent thermal damage. Especially in industrial plants, this can lead to costly production downtimes.



Optimized trefoil arrangement per system



Non-ideal per-phase arrangement

Your benefits

- > Guided workflow
- > Fast and easy setup
- > No rewiring needed
- > Increased safety

Ordering options

	Description	Item no.	Standard Package P0010062 [1]	Advanced Package P0010063 [1]	Grounding Package P0005926	Cable Package P0011791	Complete II Package P0011790
	COMPANO 100 test set Including standard accessories such as 3 m / 10 ft cable set, power supply, C-Shunt 10 Included application module: QUICK Included service: Standard service	–	■	■	■	■	■
	VOUT Independent voltage output		□ [1]	□ [1]	■	■	■
	FLEX Application module More information on page 8	P0006857	■	■	□	□	■
	Micro-ohm Application module More information on page 8	P0006858	■	■	■	■	■
	Polarity check Application module More information on page 8	P0006859	□	■	□	□	■
GROUNDING SYSTEM	Grounding system Package of application modules for grounding systems. More information on page 10	P0000410	□	□	■	□	■
CABLE MEASUREMENT	Cable measurement Cable impedance application module Cable shield current application module More information on page 12	P0010815 P0010814	□ □	□ □	□ □	■ ■	■ ■
	Wiring check add-on CPOL3 Current clamp	P0009398 P0008992	□ □	■ ■	□ □	□ ■	■ ■
	Ground system accessories Accessories for measuring ground impedance, soil resistivity and reduction factor with the included Rogowski coil. Also used to inject current for measurements with HGT1.	P0006490	□	□	■	□	■
	Step and touch voltage accessories Package for measuring step and touch voltages within HV stations and surrounding areas. Including handheld grounding tester HGT1 and accessories.	P0006491	□	□	■	□	■
	CIB1 – Cable measurement accessory Accessory for measuring impedance and shield currents on cables. Can be also used for current injection at grounding system tests. More information on page 12.	P0011792	□	□	□	■	■

[1] Available with voltage output licence (:Vout) or without (:noVout)

□ = Optional ■ = Standard

Ordering options

	Description	Item no.	Standard Package P0010062 [1]	Advanced Package P0010063 [1]	Grounding Package P0005926	Cable Package P0011791	Complete II Package P0011790
	Device bag Protective soft bag for the COMPANO 100	E1557600					
	Combined shoulder strap and handle (works with or without soft bag)	E1557500	□	■	■	■	■
	Accessory bag with shoulder strap	E1557700					
	Trolley / Backpack for CMC test sets With wheels, extendable handle and shoulder straps. Can be also used for CIB1 and other accessories.	E1636000	□	□	□	■	■

For more accessories, please refer to the COMPANO 100 Ordering Information.

Advanced technical support

Service contracts[1]

The optional service contracts are an annual fee-based extension to the free 24/7 COMPANO 100 device support (see page 19). They offer maximum security for the users and include:

- Free calibration and software updates
- Premium application support 24/5
- Extended warranty – repairs free-of-charge
- Battery exchangeable if SOH is below 75 %
- Exchange worn out accessories

Contact your sales representative to find out about terms and conditions and the types of contracts available in your country.

[1] May not be available in all countries

Technical data COMPANO 100

COMPANO 100

Output – I OUT [1]

Range	Current	t_{max} [2,3]	V_{max}	$Power_{max}$
110 A AC (15 ... 500 Hz)	80 ... 110 A	2.2 s	9.0 V	600 W
	40 ... 80 A	4.2 s	12.5 V	600 W [4]
	0 ... 40 A	20 s	15.0 V	600 W
20 A AC (15 ... 500 Hz)	15 ... 20 A	10 min	20.0 V	400 W
	0 ... 15 A	20 min	20.0 V	300 W
	0 ... 12 A	> 2 h	4.0 V	50 W [5]
100 A DC	80 ... 100 A	2.2 s	9.0 V	600 W
	40 ... 80 A	4.2 s	12.5 V	600 W
	0 ... 40 A	20 s	15.0 V	600 W
20 A DC	15 ... 20 A	10 min	20.0 V	400 W
	0 ... 15 A	20 min	20.0 V	300 W
	0 ... 12 A	> 2 h	4.0 V	50 W [5]

Output – V OUT (optional)

Range	Voltage	t_{max} [3]	I_{max}	$Power_{max}$
150 V AC (15 ... 500 Hz)	75 ... 150 V AC	1 min	200 mA	30 W
	0 ... 75 V AC	1 min	200 mA	15 W
220 V DC	110 ... 220 V DC	1 min	200 mA	30 W
	0 ... 110 V DC	1 min	200 mA	22 W
AUX DC Mode	48 ... 220 V DC	1 s	900 mA	60 W
		> 2 h	500 mA	45 W

Output measurements – Accuracy

AC	Error guar.	Error typ. [6]
110 A range	< 1.00 % of rd. [7] + 0.40 % of rg. [7]	< 0.50 % of rd. + 0.20 % of rg.
20 A range	< 1.60 % of rd. + 0.40 % of rg.	< 0.80 % of rd. + 0.20 % of rg.
150 V range	< 0.30 % of rd. + 0.30 % of rg.	< 0.15 % of rd. + 0.15 % of rg.

Phase error [7,8]	Error guar.	Error typ. [6]
110 A range	< 0.3°	< 0.1°
20 A range	< 0.3°	< 0.1°
150 V range	< 0.3°	< 0.1°

DC	Error guar.	Error typ. [6]
100 A range	< 1.20 % of rd. [7] + 0.80 % of rg. [7]	< 0.60 % of rd. + 0.40 % of rg.
20 A range	< 1.20 % of rd. + 0.80 % of rg.	< 0.60 % of rd. + 0.40 % of rg.
220 V range [9]	< 0.30 % of rd. + 0.30 % of rg.	< 0.15 % of rd. + 0.15 % of rg.

Inputs IN1 & IN2 [10] – Accuracy

Voltage AC 500 kΩ	Error guar.	Error typ. [6]
300 V range	< 0.30 % of rd. [7] + 0.10 % of rg. [7]	< 0.15 % of rd. + 0.05 % of rg.
30 V range	< 0.30 % of rd. + 0.10 % of rg.	< 0.15 % of rd. + 0.05 % of rg.
1 V range	< 0.40 % of rd. + 0.20 % of rg.	< 0.20 % of rd. + 0.10 % of rg.
100 mV range	< 0.40 % of rd. + 0.20 % of rg.	< 0.20 % of rd. + 0.10 % of rg.

Phase error [7,8]	Error guar.	Error typ. [6]
300 V range	< 0.3°	< 0.1°
30 V range	< 0.3°	< 0.1°
1 V range	< 0.3°	< 0.1°
100 mV range	< 0.3°	< 0.1°

Voltage DC 500 kΩ	Error guar.	Error typ. [6]
300 V range	< 0.20 % of rd. [7] + 0.10 % of rg. [7]	< 0.10 % of rd. + 0.05 % of rg.
30 V range	< 0.30 % of rd. + 0.10 % of rg.	< 0.15 % of rd. + 0.05 % of rg.
1 V range	< 0.40 % of rd. + 0.20 % of rg.	< 0.20 % of rd. + 0.10 % of rg.
100 mV range	< 0.40 % of rd. + 0.40 % of rg.	< 0.20 % of rd. + 0.20 % of rg.

Binary inputs	Timing accuracy
Binary wet > 500 kΩ	0.2 ms
Binary dry > 90 kΩ	0.2 ms

Micro-ohm application module (IN1 only)

Range	Voltage range	Injected current	Error typ. [6]
0.5 uΩ ... 1 mΩ	100 mV	100 A	< 0.50 % of rd. [7] + 0.5 uΩ
5 uΩ ... 10 mΩ	1 V	100 A	< 0.50 % of rd. + 5 uΩ
50 uΩ ... 100 mΩ	1 V	10 A	< 0.50 % of rd. + 50 uΩ
1.5 mΩ ... 3 Ω	30 V	10 A	< 0.50 % of rd. + 1.5 mΩ

Power specifications of charger

Voltage nominal	115 V / 230 V AC
Permitted	95 V ... 132 V / 198 V ... 264 V AC
Frequency nominal	50 Hz / 60 Hz
Max. input power of charger	180 W
Max. output power of charger	100 W
Connection	AC socket IEC 60320/C14

Weight and dimensions

Weight	10 kg / 22 lbs device without cover
Dimensions (w x h x d)	360 x 312 x 210 mm / 14.2 x 12.3 x 8.3 in

Environmental conditions

Operating temperature [11]	-10 °C ... + 50 °C / 14 °F ... 122 °F
Storage and transportation temperature	-20 °C ... + 50 °C / -4 °F ... 122 °F
Humidity	5 % ... 95 % relative humidity, no condensation
Max. altitude for operation	4000 m / 13000 ft
Max. altitude for storage	15000 m / 50000 ft

Equipment reliability

EMC Emission	
International	IEC 61326-1
North America	FCC Subpart B of Part 15 Class A, CISPR 22
Europe	EN 61326-1, EN 55022, EN 61000-3-2/3

EMC Immunity	
International	IEC 61326-1, IEC 61000-6-5, IEC 61000-4-2/3/4/5/6/8/11/16/18
Europe	EN 61326-1, EN 61000-6-5, EN 61000-4-2/3/4/5/6/8/11/16/18

Safety	
International	IEC 61010-1, IEC 61010-2-030
North America	UL 61010-1, UL 61010-2-030, CAN/CSA-C22.2 No. 61010-1, CAN/CSA-C22.2 No. 61010-2-030
Europe	EN 61010-1, EN 61010-2-030
Shock	30 g (11 ms half sine), 3 shocks in each axis; tested according to IEC 60068-2-27
Vibration	5 g RMS, frequency range 10 ... 2 kHz; 30 min in each axis; tested according to IEC 60068-2-64

Battery

Type	Li-Ion, rechargeable [12]
Nominal voltage	50.4 V
Nominal capacity	151 Wh
Charging	with supplied charger only
Temperature range for charging	5 °C ... 45 °C / 41 °F ... 113 °F
Safety certification	UN 38.3, IEC 62133

[1] Some self-supplied relays might not work properly
[2] Applies when using a 2 × 3 m (2 × 10 feet) high-current cable
[3] Applies at an ambient temperature of 23 °C ± 5 °C (73 °F ± 9 °F)
[4] Up to 1000 W with, for example, 50 A at 400 mΩ
5 Limited by battery capacitance and charger
[6] 98 % of all units possess an accuracy greater than specified as typical
[7] rd = reading, rg = range; Accuracy values indicate that the error is smaller than ± [(read value x reading error) + (range setting x range error)]; Specifications valid for 50 Hz and 60 Hz after a warm-up time of > 10 minutes
[8] At full range magnitude
[9] Applies for currents up to 200 mA
[10] CAT III / 300 V; CAT IV / 150 V
[11] Output power degrading below 0 °C due to battery
[12] The COMPANO 100 battery is specified as “Dangerous Goods Class 9 – UN3481”. Special rules for shipment apply. Transportation on aircraft needs approval of the airline.

We create customer value through ...

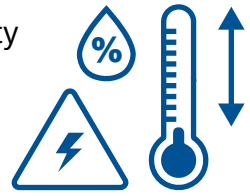
Quality

You can rely on the highest safety and security standards

Superior reliability with up to

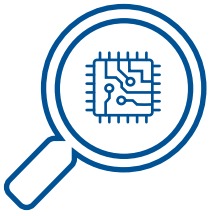
72

hours burn-in tests before delivery



100%

routine testing for all test set components



ISO 9001
TÜV & EMAS
ISO 14001
OHSAS 18001

Compliance with international standards

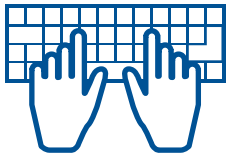
Innovation

... a product portfolio tailored to my needs

More than

200

developers keep our solutions up-to-date



More than

15%

of our annual sales is reinvested in research and development

Save up to

80%

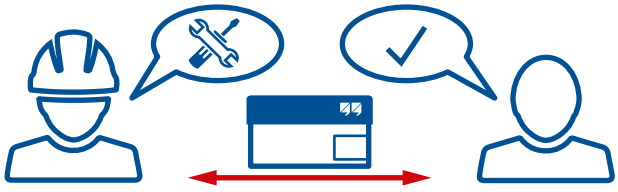
testing time through templates, and automation

Support

24/7

Professional technical support at any time

Loaner devices help to reduce downtime



Cost-effective and straight-forward repair and calibration

offices worldwide for local contact and support

Knowledge

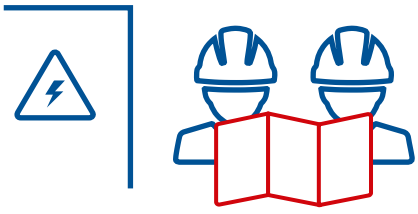
More than

300

Academy and numerous hands-on trainings per year

Frequently OMICRON hosted user meetings, seminars and conferences

to thousands of technical papers and application notes



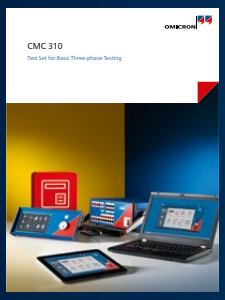
Extensive expertise in consulting, testing and diagnostics

OMICRON is an international company that works passionately on ideas for making electric power systems safe, secure, and reliable. Our pioneering solutions are designed to meet our industry's current and future challenges. We always go the extra mile to empower our customers: we react to their needs, provide extraordinary local support, and share our expertise.

Within the OMICRON group, we research and develop innovative technologies for all fields in electric power systems. Customers worldwide rely on the accuracy, speed, and quality of our reliable, user-friendly solutions for electrical testing of medium- and high-voltage equipment, protection systems, digital substations, and cybersecurity.

Founded in 1984, OMICRON draws on their decades of profound expertise in the field of electric power engineering. A dedicated team of more than 1,300 employees provides solutions with 24/7 support at 23 locations worldwide and serves customers in more than 170 countries.

The following publications provide further information on the solutions described in this brochure:



CMC 310

ARCO 400

CPC 100

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