

AT3-II S32

3-Phase 16/32 A Current Adapter with Residual Current Logging

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1 Applications

With the AT3-II S32 CEE adapter, devices which are equipped with a 16A/6h or 32A/6h 5-pin CEE plug can be quickly and efficiently connected to test instruments designed for testing portable devices in accordance with DIN VDE 0701-0702, or for testing in accordance with DIN VDE 0750 (IEC 62353) and IEC 60601, and which are furnished with an earthing contact outlet only.

The following tests can be performed on devices with CEE plugs with the help of the AT3-II S32 adapter:

- Testing of protective conductor continuity
- Insulation test
- Equivalent leakage current measurement
- Differential current measurement, L1-L2-L3-N
- Measurement of protective conductor resistance
- Function test

The CEE adapter is additionally equipped with an earthing contact outlet, to which single-phase devices under test can be connected, that are not suitable for direct connection to a test instrument, e.g. due to high starting current.



Attention!

Application Restrictions

The AT3-II S32 CEE adapter may only be used for test purposes in combination with a SECUTEST.../SECULIFE... test instrument. Other use of the adapter, in particular for continuous connection of 3-phase current devices to 3-phase electrical systems, is not permissible under any circumstances!

In any case, maximum permissible conventional thermal current is 32 A AC per phase (16 A AC at 16 A outlets).

2 Safety Features and Precautions

The AT3-II S32 CEE adapter is manufactured and tested in accordance with safety regulations IEC 61010-1 / EN 61010-1 / VDE 0411-1.

When used for its intended purpose, safety of the operator, as well as that of the instrument, is assured.

Carefully read the operating instructions before use, in particular the operating instructions included with the test instrument with which you intend to use the adapter. Follow all instructions contained therein.

The adapter is equipped with an overvoltage protection device with characteristic C16 (automatic circuit breaker) for protecting the 16 A test/mains outlets. Switch it on when performing tests.

The 3xC16A overvoltage protection device must be switched on in order to use the 16 A test/mains outlets. This is also required in order to execute the insulation test.

The AT3-II S32 CEE adapter may not be used:

- With open housing
- If external damage is apparent
- If the CEE outlet or the connector cable is damaged
- After excessive stress, i.e. if the load capacities specified in the technical data have been exceeded
- After a long period of storage under unfavorable conditions (e.g. humidity, dust or extreme temperature)

Meanings of Symbols on the Instrument



Warning concerning a point of danger
(Attention, observe documentation!)

CAT II

Measuring category II device



EC mark of conformity



This device may not be disposed of with the trash. Further information regarding the WEEE mark can be accessed on the Internet at www.gossenmetrawatt.com by entering the search term "WEEE".

3 Connecting the AT3-II S32

Before testing can be started, the AT3-II S32 must be connected to the SECUTEST.../SECULIFE... test instrument and to mains power. Proceed as follows:

- Connect the mains cable from the SECUTEST.../SECULIFE... test instrument to the earthing contact outlet labeled "Tester Outlet" included on the AT3-II S32.
- Connect the earthing contact cable from the AT3-II S32 to the test/mains outlet at the SECUTEST.../SECULIFE... test instrument. The connection at the AT3-II S32 is labeled "to test instrument test/mains outlet".
- **Differential current measurement:** Insert the 4 mm plugs on the cable from the AT3-II S32, which is labeled "tester sockets 2 & 3", into sockets 2 and 3 at the SECUTEST.../SECULIFE... test instrument (prerequisite for SECUTEST SII: feature F01).
- **Protective conductor current measurement:** This measurement is performed as described in the SECUTEST.../SECULIFE... operating instructions.
- Plug the CEE connector cable from the AT3-II S32 into a suitable 32A/6h CEE outlet within your electrical installation. The connection at the AT3-II S32 is labeled "Mains, 3~ 400 V, 32 A 50...60 Hz". As of this point in time, the AT3-II S32 and the test instrument are supplied with electrical power.
- Finally, connect the device under test to the CEE or earthing contact outlet at the AT3-II S32. These are identified with the designation "test/mains outlet".

Testing can now be started (see section 4).

4 Testing with the AT3-II S32

You can now execute all tests which are otherwise possible with the SECUTEST.../SECULIFE... test instrument, and which are supported by the AT3-II S32 adapter, on devices with CEE plugs just as you would for devices with earthing contact plugs. Proceed as described in the operating instructions for the SECUTEST.../SECULIFE... test instrument to this end.

The following characteristics of the AT3-II S32 adapter must be taken into consideration when performing tests with the SECUTEST.../SECULIFE... test instrument:

Testing Protective Conductor Resistance

When testing protective conductor resistance, measured protective conductor resistance is increased by an amount which is caused by the protective conductor system of the AT3-II S32 CEE adapter itself. In case of doubt, i.e. if measurement results are close to the permissible limit value, measure the adapter's protective conductor resistance at the PE terminal of its CEE outlet, and subtract the result from the measured value obtained for the DUT-adapter system.

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Insulation test

During insulation testing, the three phase terminals (L1, L2 and L3) and the neutral terminal (N) at the DUT are short circuited, and testing is then executed.

Differential Current Measurement

During 3-phase residual current measurement, the resulting residual current is transmitted via the test cable to the SECUTEST.../SECULIFE... test instrument (sockets 2 and 3) as a voltage value, and recorded.

– In the case of automatic testing in accordance with standards

- ⇨ Initialize the standard-specific setup.
- ⇨ Select “Sequence” and deactivate the auto-test method.

During testing in accordance with standards, a menu then appears with which either equivalent leakage current or residual current can be selected.

- ⇨ Select “residual current”.

The DUT is connected to line voltage via the AT3-II S32. The DUT's residual current is measured, and it can be tested for correct functioning at the same time.

Protective Conductor Current Measurement

Current in the protective conductor can be measured directly via the protective conductor terminal at the adapter's earthing contact plug (see SECUTEST.../SECULIFE... operating instructions).

Function Test

Before executing the function test, or any other tests for which the DUT is supplied with mains power and must be placed into operation, it must be assured that there are no short-circuits in the DUT between phase conductors L1, L2 and L3 and/or neutral conductor N! Nonobservance may result in damage to, or destruction of the AT3-II S32 adapter, and possibly the device under test as well!

The DUT's **power and current consumption values** CANNOT be determined during function testing with the AT3-II S32 adapter. The displayed values indicate power consumption for the AT3-II S32 adapter.

Always start the test with the SECUTEST.../SECULIFE... test instrument (orange lamp on the AT3-II S32 lights up) **before switching the device under test on!** In the case of extreme initial current at the DUT, nonobservance of this startup sequence may result in damage to, or destruction of the AT3-II S32 adapter!



Attention!

Disabling of Protective Devices – Max. Current Consumption

As soon as the orange lamp at the AT3-II S32 lights up, the terminals at the mains outlet from which power is supplied are connected to the 32 A test/mains outlet at the AT3-II S32 adapter without the use of a fuse or any other protective devices. Make sure that only devices designed for use with 3-phase current with a **maximum** current consumption of **3 x 32 A (AC-1)** are connected to this outlet.



Attention!

Testing the DUT for Short-Circuits

Short-circuiting of two or all three phases of the device

under test cannot be detected by the SECUTEST.../SECULIFE... test instrument until after residual current testing has been executed! In such cases, the AT3-II S32 adapter may be severely damaged as a result of current surges when this test is executed!

Before connecting a device to the AT3-II S32, make sure that there are no short-circuits between the DUT's phases by means of appropriate testing, for example with a continuity tester!



Attention!

Connection of the DUT with Correct Phase Sequence

In particular after repairing 3-phase devices or connecting new CEE plugs to such devices, make sure that the phases are connected in the correct sequence.



Attention!

Test Sequence – Initial Current Problem

– Starting the Test

Always start the test with the SECUTEST.../SECULIFE... test instrument (orange lamp on the AT3-II S32 lights up) before switching the device under test on!

– Ending the Test

Switch the DUT off first, and then stop testing at the SECUTEST.../SECULIFE... test instrument.

In the case of extreme initial current at the DUT or inductivity within the electrical circuit, nonobservance of this sequence may result in damage to, or destruction of the AT3-II S32 adapter!

5 Characteristic Values

Electrical Safety

Protection class	I per IEC 61010-1/EN 61010-1/VDE 0411-1
Operating voltage	300 V
Test voltage	2.2 kV
Current-carrying capacity	32 A 3-phase, 40 A (AC-1) KB 10 min.
Intrinsic connected load, “mains active”	10 VA, $\cos \varphi \sim 0.4$
Measuring category	II
Pollution degree	2
Interference emission	EN 61326-1:2013, class B
Interference immunity	EN 61326-1:2013

Differential Current

Measuring range	0.08 to 10.0 mA AC
Intrinsic uncertainty	4% rdg. $\pm 40 \mu\text{A}$
Operating uncertainty	6% rdg. $\pm 60 \mu\text{A}$

Mechanical Design

Protection	Housing: IP 40, connections: IP 20
Dimensions	L x W x H: 285 x 220 x 128 mm (without cables and grommets)
Weight	4.15 kg