

Supplementary Sheet

Functions and Handling of Safety Accessories

Document ID
ENU 1191 14 05

Abstract

This document describes the functions and handling of the following accessories:

- SAA1 Beeper Dongle
- SAA2 Warning Lamp
- SAA3 3-Position Remote Safety Switch
- *CP Strobe* Warning Lamp

It includes the designated use, information about the compatibility with different main devices as well as operation, connection, disconnection and cleaning instructions. Furthermore, the technical data for each accessory can be found in the corresponding chapter.

© OMICRON electronics GmbH 2024. All rights reserved.

This manual is a publication of OMICRON. All rights including translation reserved. Reproduction of any kind, for example, photocopying, microfilming, optical character recognition and/or storage in electronic data processing systems, requires the explicit consent of OMICRON. Reprinting, wholly or in part, is not permitted.

The product information, specifications, and technical data embodied in this manual represent the technical status at the time of writing and are subject to change without prior notice.

We have done our best to ensure that the information given in this manual is useful, accurate, up-to-date, and reliable. However, OMICRON does not assume responsibility for any inaccuracies which may be present.

The user is responsible for every application that makes use of an OMICRON product.

OMICRON translates this manual from the source language English into a number of other languages. Any translation of this manual is done for local requirements, and in the event of a dispute between the English and a non-English version, the English version of this manual shall govern.

Contents

1	Safety instructions	6
1.1	Operator qualifications	6
1.2	Five safety rules.....	6
1.3	Safety instructions	6
1.4	Work environment.....	7
1.5	Personal safety	7
1.6	Mechanical safety	7
1.7	Related documents	8
1.8	Compliance statement	9
1.9	Recycling.....	9
2	Compatibility with OMICRON test systems.....	10
3	Connecting with main devices.....	14
3.1	Cascadability	14
3.2	Use of the main device <i>Safety Connector Dongle(s)</i>	15
4	SAA1 Beeper Dongle.....	16
4.1	Designated use.....	16
4.2	Operation.....	17
4.3	Connection	18
4.4	Testing	19
4.5	Disconnection	20
4.6	Cleaning	20
4.7	Technical data	21
5	SAA2 Warning Lamp.....	22
5.1	Designated use.....	22
5.2	Operation.....	23
5.3	Connection	27
5.4	Testing	29
5.5	Disconnection	30
5.6	Cleaning	30
5.7	Technical data	31
5.7.1	Control unit	31
5.7.2	Signal lamps	33
6	SAA3 3-Position Remote Safety Switch.....	35

6.1	Designated use.....	35
6.2	Operation.....	36
6.3	Connection	37
6.4	Testing	38
6.5	Disconnection	39
6.6	Cleaning	39
6.7	Technical data	40
7	CP Strobe Warning Lamp	42
7.1	Designated use.....	42
7.2	Operation.....	43
7.3	Connection	44
7.4	Testing	45
7.5	Disconnection	46
7.6	Cleaning	46
7.7	Technical data	47
8	Support.....	48

About this document

This document provides information on how to use this product safely, properly and efficiently.

It contains important safety rules for working with this product and gets you familiar with operating this product. Following the instructions in this document will help you to prevent danger, repair costs, and avoid possible down time due to incorrect operation.

This document is to be supplemented by existing national safety standards for accident prevention and environmental protection.

Safety symbols used

The following symbols indicate safety instructions for avoiding hazards.



DANGER

Death or severe injury will follow if the appropriate safety instructions are not observed.



WARNING

Death or severe injury may occur if the appropriate safety instructions are not observed.



CAUTION

Minor or moderate injury may occur if the appropriate safety instructions are not observed.

NOTICE

Equipment damage or loss of data possible.

1 Safety instructions

1.1 Operator qualifications

Only authorized and qualified personnel who are regularly trained in electrical engineering and their specific tasks are permitted to operate the device and any accessories.

Operators must be familiar with the equipment and observe all applicable standards, local regulations, and safety-relevant documents, for example, the following standards or their equivalents:

- EN 50191 (VDE 0104) "Erection and Operation of Electrical Test Equipment"
- EN 50110-1 (VDE 0105 Part 100) "Operation of Electrical Installations"
- IEEE 510 "IEEE Recommended Practices for Safety in High-Voltage and High-Power Testing"

Personnel receiving training, instructions, directions, or education on the device must be under constant supervision of an experienced operator while working with the equipment.

- ▶ Before starting to work, clearly establish the responsibilities:
 - Designated person in control of the electrical installation
 - Designated person in control of the work activities
- ▶ Make sure that the designated person in control of the work activities coordinates the communication with all persons involved in work activities.

1.2 Five safety rules

Always observe the five safety rules:

- ▶ Disconnect completely.
- ▶ Secure against re-connection.
- ▶ Verify that the installation is dead.
- ▶ Carry out grounding and short-circuiting.
- ▶ Provide protection against adjacent live parts.

1.3 Safety instructions

- ▶ Stay focused on your tasks to ensure safety.
- ▶ If the device or any accessory does not seem to function properly, do not use it. If in doubt, contact OMICRON Support (→ Support on page 48).
- ▶ Only use original cables provided by OMICRON.
- ▶ Only use original accessories provided by OMICRON.
NOTE! The use of different cables and accessories is at the customer's own risk, considering the necessary high safety standards, the technical requirements, as well as relevant norms and certification standards. If in doubt, contact OMICRON Support (→ Support on page 48).
- ▶ Make sure that the test object is isolated from other sources during testing.

1.4 Work environment

- ▶ Only use the device on dry, solid ground.
- ▶ Do not operate the device in a condensing environment.
- ▶ Do not operate the device in the presence of explosive gas or vapors.
- ▶ Do not operate the device under ambient conditions that exceed the temperature and humidity limits listed in the Technical data section.
- ▶ Before using any additional equipment, make sure that the environmental conditions are suitable for that equipment.
- ▶ Make sure that the device and all accessories are dry and clean. In dusty regions, use protective cable caps.

1.5 Personal safety

- ▶ Protect others from accessing the danger zone and accidentally touching live parts by setting up a suitable barrier and, if applicable, warning lights.
- ▶ Warn other people prior to any operation to make them aware of any possible disturbances.
- ▶ If you have a cardiac pacemaker, do not use the device. If you have another type of electronic medical implant, consult a medical professional before operating the device. Make sure there is no person with an electronic medical implant such as a cardiac pacemaker in the immediate vicinity.
- ▶ Leave the danger zone before performing a test with the device. Stay in the work area during the test.

1.6 Mechanical safety

- ▶ Do not insert objects into any of the device's openings.
- ▶ Do not cover the device and make sure any ventilation openings remain unobstructed.
- ▶ Ensure that all safety-relevant components such as safety lamps and emergency switching off buttons are always visible and accessible.
- ▶ Test leads wired to tall test objects must be sufficiently mechanically secured. Be aware of the hazard of falling adapters or cables.
- ▶ Do not open the device without authorization.
- ▶ Do not modify or repair the device.
- ▶ Contact OMICRON Support (→ Support on page 48) for maintenance and repair.

1.7 Related documents

- Refer to the manuals of the main devices listed in the table below for more detailed information about the use of *Safety Accessories* as part of the related test systems.

Table 1: Related documents

Title	Description
SAA1 User Manual	Contains safety information and use case examples for the SAA1 Beeper Dongle.
CIBANO 500 Getting Started	Contains safety information and use case examples for the CIBANO 500 test system.
CIBANO 500 User Manual	Contains safety and operation instructions for the CIBANO 500 test system.
COMPANO 100 Getting Started	Contains safety information and use case examples for the COMPANO 100 test system.
COMPANO 100 User Manual	Contains safety and operation instructions for the COMPANO 100 test system.
CPC Getting Started	Contains general safety instruction and information for the CPC 100 and CPC 80 test systems.
CPC 80 User Manual	Contains safety and operation instructions for the CPC 80 test system.
CPC 100 User Manual	Contains safety and operation instructions for the CPC 100 test system.
CPC 100 Reference Manual	Contains detailed hardware and software information for the CPC 100 test system including relevant safety instructions.
CPC 100 PTM User Manual	Contains information on how to use <i>Primary Test Manager</i> (PTM) with CPC 100 test system.
TESTRANO 600 Getting Started	Contains safety information and use case examples for the TESTRANO 600 test system.
TESTRANO 600 User Manual	Contains safety and operation instructions for the TESTRANO 600 test system.
VOTANO 100 Getting Started	Contains safety information and use case examples for the VOTANO 100 test system.
VOTANO 100 User Manual	Contains safety and operation instructions for the VOTANO 100 test system.

1.8 Compliance statement

Declaration of conformity (EU)

The equipment adheres to the guidelines of the council of the European Community for meeting the requirements of the member states regarding the following directives:

- Electromagnetic compatibility (EMC) directive
- Low voltage directive (LVD)
- RoHS directive
- Radio equipment directive (RED)

For more information, see sections 4.7, 5.7, 6.7 and 7.7.

1.9 Recycling



This test set (including all accessories) is not intended for household use. At the end of its service life, do not dispose of the test set with household waste!

For customers in EU countries (incl. European Economic Area)

OMICRON test sets are subject to the EU Waste Electrical and Electronic Equipment Directive 2012/19/EU (WEEE directive). As part of our legal obligations under this legislation, OMICRON offers to take back the test set and ensure that it is disposed of by authorized recycling agents.

For customers outside the European Economic Area

Please contact the authorities in charge for the relevant environmental regulations in your country and dispose the OMICRON test set only in accordance with your local legal requirements.

2 Compatibility with OMICRON test systems

The aim of the *Safety Accessories* described in this document is to increase the safety during operation of OMICRON test systems. Use the *Safety Accessories* ONLY with compatible main devices of test systems and their accessories. Using other main devices of other test systems may impair the protection and functionalities provided by the *Safety Accessory*. Table 2 gives an overview about the compatibility of the *Safety Accessories* with OMICRON main devices/test systems.

Table 2: Compatibility with OMICRON main devices (marked with a "+")

	SAA1	SAA2	SAA3	SAB1 ¹	CP Strobe ²
CIBANO 500	+	+	+	—	+
COMPANO 100	—	+	+	—	—
CPC 80/100	+	+	+	—	+
TESTRANO 600	+	+	+	—	+
VOTANO 100	+	+	—	+	—

Some of the main devices listed above in Table 2 have only one **SAFETY** output, while some have 2 **SAFETY** outputs:

Main devices with one SAFETY output connector

- COMPANO 100
- CPC 80 / CPC 100
- VOTANO 100 with VBO2

Main devices with 2 SAFETY output connectors

- CIBANO 500
- TESTRANO 600

The **SAFETY** output connector locations for each main device are shown in Table 3 on the following page.

NOTE! We recommend cascading only a maximum of 2 *Safety Accessories* per **SAFETY** output for CIBANO 500 and TESTRANO 600.

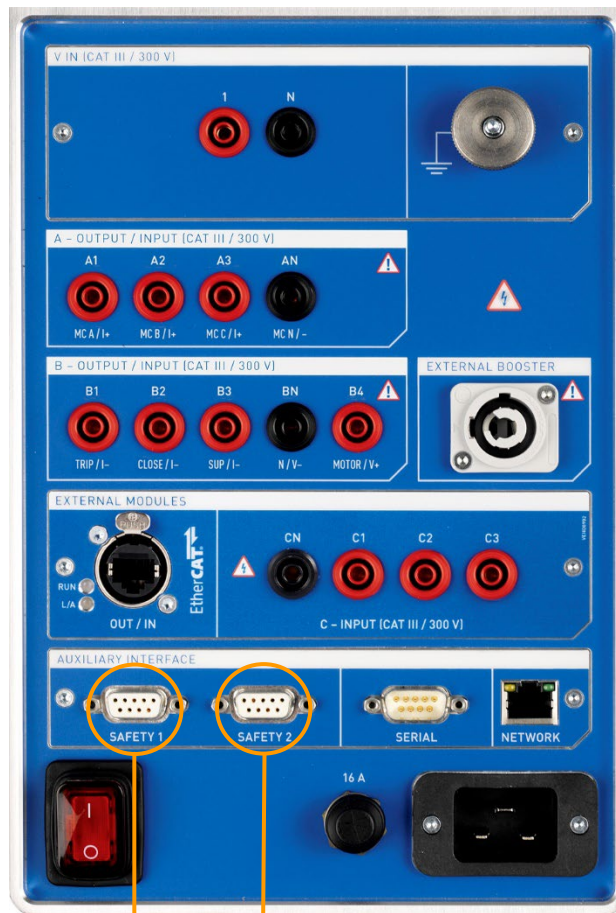
NOTE! If cascading SAA2 with any other *Safety Accessory* using the **SAFETY** output connectors of CIBANO 500 or TESTRANO 600, cascade the SAA2 only with a *Safety Accessory* connected to **SAFETY 1** connector of the CIBANO 500 or TESTRANO 600.

¹ SAB1 is only to be used with and compatible with VOTANO 100. For more information and documentation on SAB1 please see VOTANO 100 Getting Started and VOTANO 100 User Manual.

² CP Strobe is discontinued and replaced by the SAA2.

Table 3: **SAFETY** output connector(s) on the main devices

CIBANO 500



1 2
SAFETY OUTPUT



NOTE! When connecting the *Safety Accessory SAA2* Warning Lamp to the *CIBANO 500* use ONLY **SAFETY 1** connector for the connection.

CPC 80/100



SAFETY OUTPUT

TESTRANO 600



SAFETY OUTPUT



NOTE! When connecting the *Safety Accessory SAA2* Warning lamp to the *TESTRANO 600* use ONLY **SAFETY 1** connector for the connection.

COMPANO 100



SAFETY OUTPUT

VOTANO 100 AND VBO2



SAFETY OUTPUT



NOTE! *Safety Accessories* (SAA1 or SAA2) can be used with VOTANO 100 only by first connecting the VBO2 to the VOTANO 100 and by connecting the *Safety Accessory* to the SAFETY connector on the VBO2 and connecting the SAB1 as the last *Safety Accessory*.

3 Connecting with main devices

Any *Safety Accessory* is connected to the test system's main device (except for *VOTANO 100*, which is first connected to *VBO2*, to which the *Safety Accessory* and the *SAB1* are then connected to). The connection is made to the main device's **SAFETY** output connector (or in the case of *VOTANO 100*, to the **SAFETY** output connector on *VBO2*) by using a 9-pin D-SUB connector, which is either integrated into the *Safety Accessory* (*SAA1*) itself or by using a safety connector cable, which has 9-pin D-SUB connectors either at both ends of the cable (*SAA2*) or at only the other end of the cable (*SAA3*).

NOTE! Before connecting a *Safety Accessory* to a **SAFETY** output connector remove the factory installed *Safety Connector Dongle* from the **SAFETY** output connector (this does not apply to *VOTANO 100*). See also 3.2 Use of the main device *Safety Connector Dongle(s)*.

The connection must be mechanically secured by tightening either the locking wheels (*SAA1* Beeper Dongle) or by tightening the locking thumb screws on the D-SUB connectors (*SAA2* and *SAA3*).

It is also possible to cascade (daisy chain) *Safety Accessories* but there are certain limitations and recommendations regarding cascading and the selection of the used **SAFETY** output connector. These limitations and recommendations are defined in section 3.1 Cascadability.

3.1 Cascadability

Table 4 below lists the allowed cascading (daisy chaining) combinations for the *Safety Accessories* per one **SAFETY** output. When cascading *Safety Accessories*, the order in which the *Safety Accessories* are connected to the main device unit can be freely chosen apart from the requirement that the first *Safety Accessory* connected to the main device **SAFETY** connector must itself have a **SAFETY** output connector to enable cascading.

NOTE! Cascading more than 2 *Safety Accessories* is only possible with *CPC 80/100* as the main device.

Table 4: Cascadability of the *Safety Accessories* for one **SAFETY** output:

Number of <i>Safety Accessories</i>	Possible cascading combinations per one SAFETY output
One <i>Safety Accessory</i>	<i>SAA1</i> <i>SAA2</i> * <i>SAA3</i> <i>CP Strobe</i>
2 <i>Safety Accessories</i>	<i>SAA1</i> (cascadable) + <i>SAA3</i> <i>SAA1</i> (cascadable) + <i>CP Strobe</i> ¹ (cascadable) or <i>SAA2</i> * <i>CP Strobe</i> ^{1,2} (cascadable) + <i>SAA3</i> <i>SAA2</i> * + <i>SAA3</i>
Three <i>Safety Accessories</i> (only for <i>CPC 80/100</i>)	<i>SAA1</i> (cascadable) + <i>CP Strobe</i> ^{1,2} (cascadable) + <i>SAA3</i> <i>SAA1</i> (cascadable) + <i>SAA2</i> * (cascadable) + <i>SAA3</i>

* When connecting *SAA2* to *CIBANO 500* or *TESTRANO 600* connection must be made ONLY to connector **SAFETY 1**.

¹ *CP Strobe* is discontinued and replaced by *SAA2*.

² *CP Strobe* brightness might be reduced when used with *CPC 80/100*.

3.2 Use of the main device **Safety Connector Dongle(s)**

OMICRON main devices (excluding *VOTANO 100*) are delivered with pre-installed *Safety Connector Dongles*. Some main devices are delivered with one *Safety Connector Dongle* (*CPC 80/100*, *COMPANO 100*) while others are delivered with 2 *Safety Connector Dongles* (*CIBANO 500*, *TESTRANO 600*). A *Safety Connector Dongle* is shown in Figure 1 further below.

NOTE! *VOTANO 100* delivery does NOT include a *Safety Connector Dongle*. *VOTANO 100* is connected to *VBO2* and *SAB1* safety box is connected to the **SAFETY** output connector on *VBO2* or to the last daisy chained *Safety Accessory*. *SAB1* includes a similar safety termination as a *Safety Connector Dongle*.

The *Safety Connector Dongle(s)* must always be installed on the **SAFETY** output connector(s) of the main device (→ Exceptions below). If a *Safety Accessory* is to be attached to a main device **SAFETY** output, the original factory installed *Safety Connector Dongle* must first be removed after which the *Safety Accessory* is connected. The original *Safety Connector Dongle* must be then attached to the *Safety Accessory*'s own **SAFETY** output connector, unless another *Safety Accessory* is cascaded to the first *Safety Accessory*, in which case the *Safety Connector Dongle* is attached to the outermost *Safety Accessory*'s **SAFETY** output connector.

NOTE! The *CIBANO 500* and *TESTRANO 600* both have 2 **SAFETY OUTPUT** connectors (**SAFETY 1** and **SAFETY 2**). Both must have the *Safety Connector Dongle* installed either directly to the **SAFETY** output connector of the main device or to the **SAFETY** output connector of the outermost cascaded *Safety Accessory*.

NOTE! In the case of *CIBANO 500* and *TESTRANO 600* and when connecting the *SAA2* to the main device, either as the only *Safety Accessory* or by cascading with other *Safety Accessories*, the *SAA2* can be connected ONLY to **SAFETY 1** connector of the main device.

Exceptions

SAA3 - An exception to the above is the *SAA3*, which does not have its own **SAFETY** output connector. In this case the original *Safety Connector Dongle* is not connected but should be stored in a secure place for later use. In case of cascading, the *SAA3* must be the outermost connected *Safety Accessory*.

VOTANO 100 - *SAB1* must always be connected to the **SAFETY** output connector of *VBO2* or as the last daisy chained accessory connected to the **SAFETY** output connector of *VBO2*.



Figure 1: Main device *Safety Connector Dongle* (not included with *VOTANO 100*)

4 SAA1 Beeper Dongle

4.1 Designated use

The SAA1 Beeper Dongle generates an acoustic signal when the test system's outputs are activated. Since *CIBANO 500**, *VOTANO 100*, and *TESTRANO 600* have an internal beeper, the SAA1 Beeper Dongle is optimized for use with the *CPC 80* and the *CPC 100*.

* **NOTE!** Some *CIBANO 500* software versions do not support an internal beeper function.

Compatibility with main devices

SAA1 Beeper Dongle is intended to be used together with the following main devices:

- *CIBANO 500*
- *CPC 80 / CPC 100*
- *TESTRANO 600*
- *VOTANO 100*

See also the documents listed in the following table:

Table 5: Related documents to SAA1 Beeper Dongle

Title	Description
SAA1 User Manual	Contains safety information and use case examples for the SAA1 Beeper Dongle.
CIBANO 500 Getting Started	Contains safety information and use case examples for the <i>CIBANO 500</i> test system.
CIBANO 500 User Manual	Contains safety and operation instructions for the <i>CIBANO 500</i> test system.
CPC Getting Started	Contains safety information and use case examples for the <i>CPC 80</i> and <i>CPC 100</i> test systems.
CPC 80 User Manual	Contains safety and operation instructions for the <i>CPC 80</i> test system.
CPC 100 User Manual	Contains safety and operation instructions for the <i>CPC 100</i> test system.
CPC 100 Reference Manual	Contains detailed hardware and software information for the <i>CPC 100</i> test system including relevant safety instructions.
CPC 100 PTM User Manual	Contains information on how to use <i>Primary Test Manager</i> (PTM) with <i>CPC 100</i> test system.
TESTRANO 600 Getting Started	Contains safety information and use case examples for the <i>TESTRANO 600</i> test system.
TESTRANO 600 User Manual	Contains safety and operation instructions for the <i>TESTRANO 600</i> test system.
VOTANO 100 Getting Started	Contains safety information and use case examples for the <i>VOTANO 100</i> test system.
VOTANO 100 User Manual	Contains safety and operation instructions for the <i>VOTANO 100</i> test system.

SAFETY INPUT CONNECTOR

Connect the SAA1 to the main device's **SAFETY** output using this connector.

TEST BUTTON

An acoustic signal is generated while pressing the test button if the test system's outputs are disabled. If the test system's outputs are enabled the dongle will not produce an acoustic signal.

LOCKING WHEEL

After connecting the SAA1 to the **SAFETY** output connector of the main device, secure the mechanical connection by turning the locking wheel until the connector sits tightly in place.

SAFETY OUTPUT CONNECTOR

All signals from the **SAFETY** output of the main device are connected through the dongle from the **SAFETY** input connector of the dongle to the **SAFETY** output connector of the dongle. This allows the cascading (daisy chaining) of additional *Safety Accessories*.

Note: If *Safety Accessories* are not used, the **SAFETY** connector(s) of the main device must be terminated using the *Safety Connector Dongle(s)* delivered with the main device.

For cascading different combinations of *Safety Accessories*, see Table 4.

With *CIBANO 500* and *TESTRANO 600*, and when cascading the SAA1 with the SAA2, connect SAA1 and SAA2 in either order but **ONLY** to **SAFETY 1** connector.

Figure 2: SAA1 Beeper Dongle with its main components

4.2 Operation

The SAA1 Beeper Dongle is active when plugged in the **SAFETY** output of the main device and terminated with the test system's *Safety Connector Dongle* (→ 4.3 Connection later in this chapter). If an output of the test system is active, the SAA1 generates an acoustic signal. The functionality of the SAA1 shall be tested after each start of the main device, before performing measurements.

NOTE! If you remove the SAA1 from the main device, the test system will only work if you plug in the *Safety Connector Dongle* into the **SAFETY** connector(s) of the main device.

4.3 Connection

1. Make sure that the main device intended to be used with the SAA1 is switched off.
2. Press the **Emergency switching off button** on the main device or the test system (on VOTANO 100 the **Emergency switching off button** on the SAB1 safety box) and lock the main device with a physical key (CPC 80 and CPC 100) or by pressing the software lock button (TESTRANO 600 and VOTANO 100).

NOTE! CIBANO 500 and COMPANO 100 do not have a separate physical key nor a software lock function.

3. Remove the *Safety Connector Dongle* from the **SAFETY** output on the main device's side panel (does not apply to VOTANO 100 which does not have this dongle).
4. Plug the SAA1 in the **SAFETY** output and connect the *Safety Connector Dongle* to the **SAFETY** output of the SAA1 or connect any other compatible OMICRON Safety Accessory to the SAA1 **SAFETY** output connector. In case of VOTANO 100 connect the SAB1 to SAA1 **SAFETY** output connector.

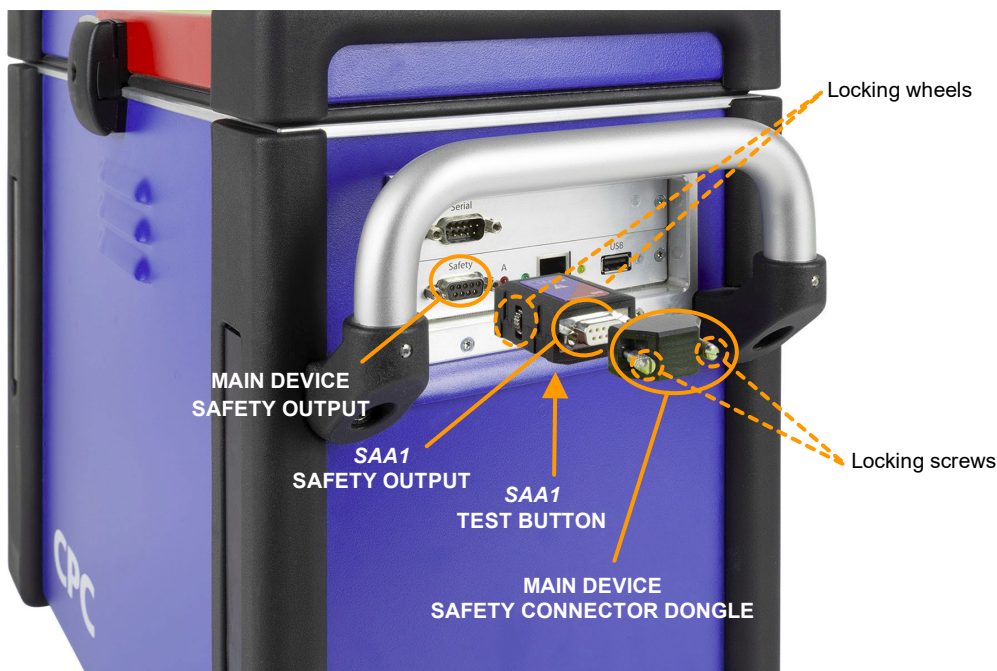


Figure 3: Fixing the SAA1 Beeper Dongle and the *Safety Connector Dongle* (example main device: CPC 80/100)

5. Fix the SAA1 Beeper Dongle and the *Safety Connector Dongle* by turning the locking wheel on both sides of the SAA1 Beeper Dongle and fastening the locking screws on the *Safety Connector Dongle*.



WARNING

Death or severe injury caused by high voltage or current possible.

- Do not remove the SAA1 while the test system's outputs are activated. Removal of the SAA1 will cause the outputs to be disabled immediately, which can lead to dangerous voltage spikes.

- Switch on the test system, release the **Emergency switching off button** and unlock the device.



WARNING

Death or severe injury caused by high voltage or current possible.

- ▶ Always obey the five safety rules. In case of malfunction of the SAA1 Beeper Dongle, it might not generate an acoustic signal while the test system's outputs are active.
- ▶ Make sure to always ground and short circuit the test objects before entering the test area and before touching potentially live elements.

4.4 Testing



WARNING

Death or severe injury caused by high voltage or current possible.

- ▶ Do not connect the main device to the asset under test.
- ▶ Set a low test current, for example 10 mA.

- Connect the SAA1 Beeper Dongle to the main device as described in 4.3 Connection.
- Switch the main device on but do not activate the outputs.
- Press the test button SAA1 and verify that the beeper inside the SAA1 emits an audio signal while the test button is being pressed.

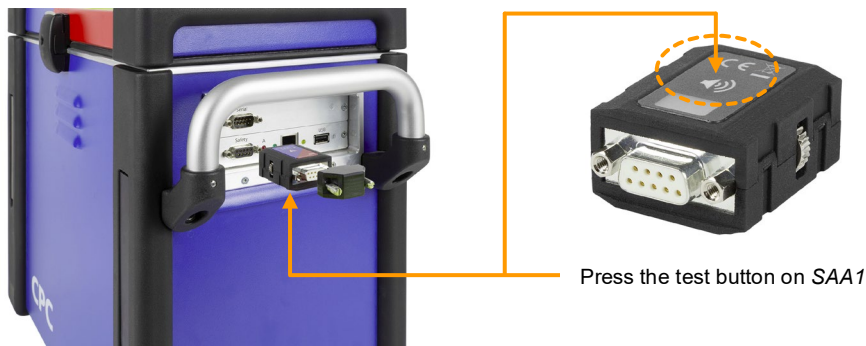


Figure 4: Testing the SAA1 beeper functionality by pressing the test button on the SAA1 (example main device: CPC 80/100)

- Activate the outputs of the main device.
- Press the test button SAA1 and verify that the beeper inside the SAA1 does not emit an audio signal while the test button is being pressed.
- If the SAA1 beeper emitted an audio signal in step 3 and did not emit an audio signal in step 5, it is working normally.

4.5 Disconnection

To disconnect the SAA1 from the main device:

1. Make sure that the main device to which the SAA1 is connected to is switched off.



WARNING

Death or severe injury caused by high voltage or current possible.

- Observe the five safety rules (→ 1.2.2 Five safety rules).

2. Press the **Emergency switching off button** on the main device or test system (in case of VOTANO 100 the **Emergency switching off button** on SAB1 safety box) and lock the main device with a physical key (CPC 80 and CPC 100) or by pressing the software lock button (TESTRANO 600).

NOTE! CIBANO 500 and COMPANO 100 do not have a separate physical key nor a software lock function.

3. Disconnect the test system from the asset under test as described in the User Manual of the main device.
4. Loosen the locking screws on the *Safety Connector Dongle* attached to the SAA1 Beeper Dongle and disconnect the *Safety Connector Dongle* from SAA1. In case of VOTANO 100 disconnect the SAB1 safety box connector from SAA1.
5. Loosen the locking wheels on the SAA1 and disconnect the SAA1 Beeper Dongle from the main device **SAFETY** output connector.
6. Insert the *Safety Connector Dongle* into the main device **SAFETY** output connector and tighten the locking screws. In case of VOTANO 100 insert the SAB1 connector into the **SAFETY** output connector of VBO2.
7. The SAA1 has now been removed and the main device has the required *Safety Accessory Dongle* installed on the **SAFETY** output connector.

4.6 Cleaning

To clean the SAA1, use a cloth dampened with isopropanol alcohol.



WARNING

Death or severe injury caused by high voltage or current possible.

- Before cleaning the SAA1, always disconnect it from the test system.

4.7 Technical data

Table 6: SAA1 specifications

Characteristic	Rating
Operating voltage	15 V _{DC}
Interface	9-pin D-SUB connector with locking screws

Table 7: Climate

Characteristic	Rating
Temperature	Operating –10 ... +55 °C (+14 ... +131 °F)
	Storage –30 ... +70 °C (–22 ... +158 °F)
Max. altitude	Operating 2 000 m (6 560 ft)
	Storage 12 000 m (40 000 ft)

Table 8: Mechanical data

Characteristic	Rating
Dimensions (w × h × d)	49 × 37 × 20 mm (1.93 × 1.46 × 0.79 in)
Weight	49 g (0.11 lb)

Table 9: Standards conformity

EMC, safety	Rating
EMC	IEC/EN 61326-1 (industrial electromagnetic environment) FCC subpart B of part 15, class A



5 SAA2 Warning Lamp

5.1 Designated use

SAA2 Warning Lamp is a multifunctional *Safety Accessory* designed to increase the safety awareness and safety while working with dangerous voltages or currents. It consists of a control unit and one or more signal lamps which are fixed at or near the test object. Each signal lamp provides an **Emergency switching off button** to switch off all outputs of the main device immediately and to bring the test setup into a safe state. Furthermore, a green continuous or a red continuous/flashing signal light indicates the status of the main device. Optionally, a buzzer inside signal lamps can generate an acoustic signal when an output of the main device is active.



Figure 5: SAA2 Warning Lamp with its main components

Compatibility with main devices

SAA2 Warning Lamp is intended to be used together with the following main devices:

- CIBANO 500
- CPC 80 / CPC 100
- TESTRANO 600
- VOTANO 100

See also the documents listed in the following table:

Table 10: Related documents to SAA2 Warning Lamp

Title	Description
CIBANO 500 Getting Started	Contains safety information and use case examples for the <i>CIBANO 500</i> test system.
CIBANO 500 User Manual	Contains safety and operation instructions for the <i>CIBANO 500</i> test system.
COMPANO 100 Getting Started	Contains safety information and use case examples for the <i>COMPANO 100</i> test system.
COMPANO 100 User Manual	Contains safety and operation instructions for the <i>COMPANO 100</i> test system.
CPC Getting Started	Contains safety information and use case examples for the <i>CPC 80</i> and <i>CPC 100</i> test systems.
CPC 80 User Manual	Contains safety and operation instructions for the <i>CPC 80</i> test system.
CPC 100 User Manual	Contains safety and operation instructions for the <i>CPC 100</i> test system.
CPC 100 Reference Manual	Contains detailed hardware and software information for the <i>CPC 100</i> test system including relevant safety instructions.
CPC 100 PTM User Manual	Contains information on how to use <i>Primary Test Manager</i> (PTM) with <i>CPC 100</i> test system.
TESTRANO 600 Getting Started	Contains safety information and use case examples for the <i>TESTRANO 600</i> test system.
TESTRANO 600 User Manual	Contains safety and operation instructions for the <i>TESTRANO 600</i> test system.
VOTANO 100 Getting Started	Contains safety information and use case examples for the <i>VOTANO 100</i> test system.
VOTANO 100 User Manual	Contains safety and operation instructions for the <i>VOTANO 100</i> test system.

5.2 Operation



WARNING

Death or severe injury caused by high voltage or current possible.

- Always test the SAA2 multifunctional *Safety Accessory* before putting it into operation as described later in this chapter.

The SAA2 multifunctional *Safety Accessory* consists of a control unit and up to six signal lamps. The SAA2 control unit has its own power supply and the SAA2 control unit serves as a power supply for all connected SAA2 signal lamps (→ Figure 10 on page 26). Place the control unit near the main device and fix all signal lamps close to the test object. The signal lamps must be well-visible for all relevant operators but be safe from the impact of high voltages or currents.

The SAA2 system is active when the control unit is powered, the connection to the **SAFETY** output of the main device is established and the main device's *Safety Connector Dongle* is plugged into the

SAFETY OUT connector of the control unit. Test the functionality of the SAA2 system after each start of the main device, before performing measurements as described later in this chapter.

NOTE! If you disconnect the SAA2 from the main device, the test system will only work if you plug in the *Safety Connector Dongle* into the **SAFETY** output connector of the main device.

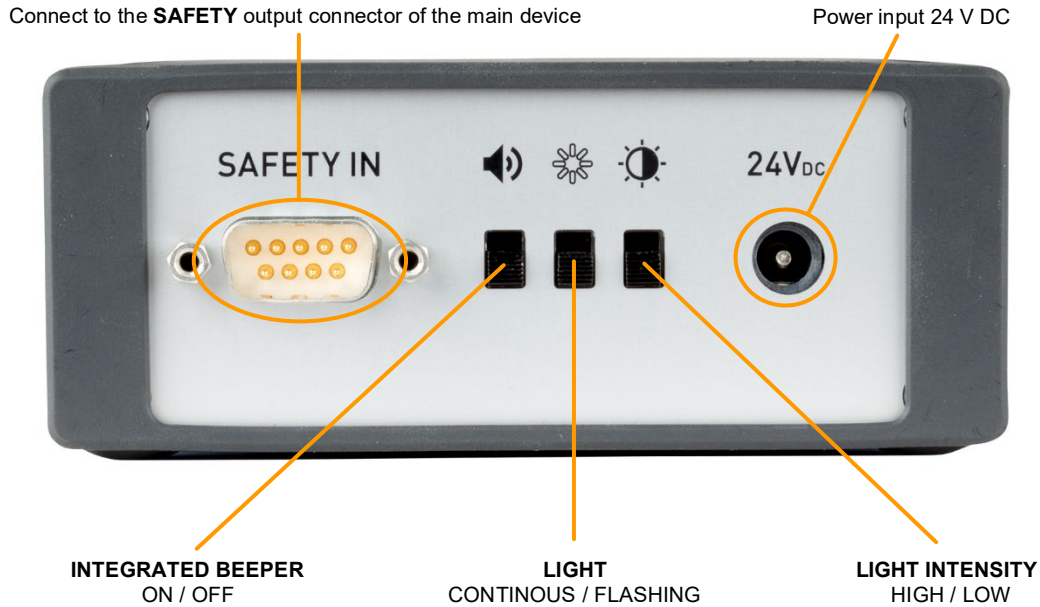
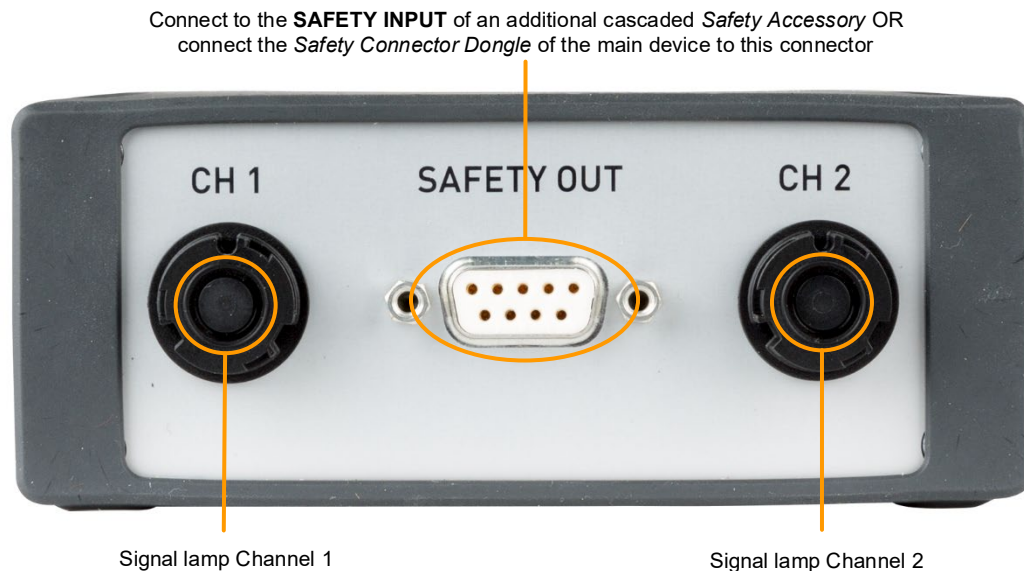


Figure 6: Front view of the SAA2



NOTE! Back view of the SAA2. Unused channel connector (CH 1 or CH 2) must be terminated by inserting a SAA2 dongle into the unused CH connector.

Figure 7: Rear view of the SAA2



Figure 8: SAA2 system in transport case

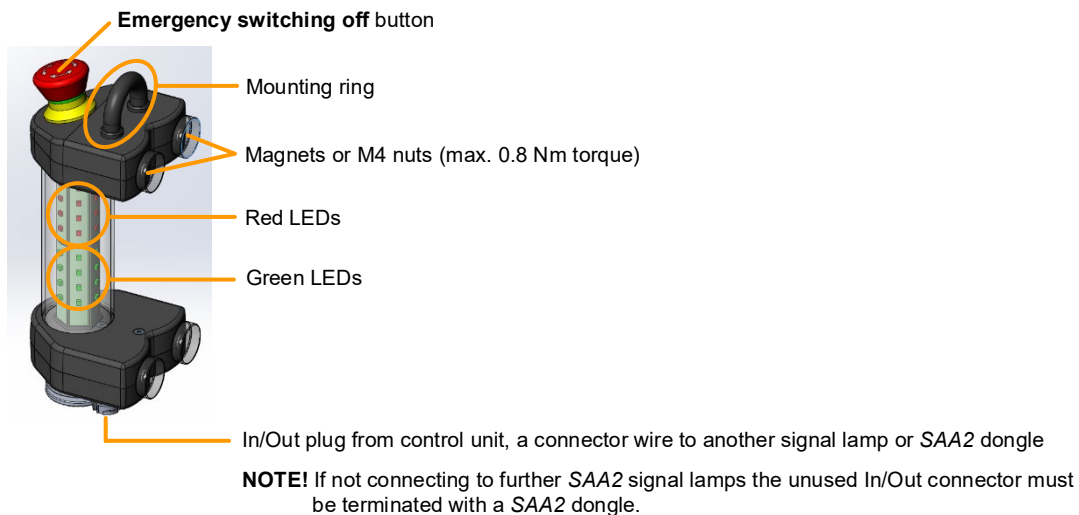


Figure 9: SAA2 signal lamp

The following table describes the status indication of the SAA2 system.

Table 11: Status indication of the SAA2 system

Signal state		Operation condition & status
Red signal light (continuous or flashing) & Beeper OFF		Depending on test device. Refer to the user documentation of the main device.
Red signal light (continuous or flashing) & Beeper ON		Depending on test device. Refer to the user documentation of the main device.
Green signal light (continuous)		Depending on test device. Refer to the user documentation of the main device.
Green signal light (flashing)		The Emergency switching off button is pressed, or the signal lamp is not connected, or the light is defective, or the dongle is not connected.
Green and red signal lights alternating (switching alternatively)		The test device is not connected with the safety interface cable to the SAA2 control unit or the safety interface cable is defective.
No signal light		Power supply defective or not connected.

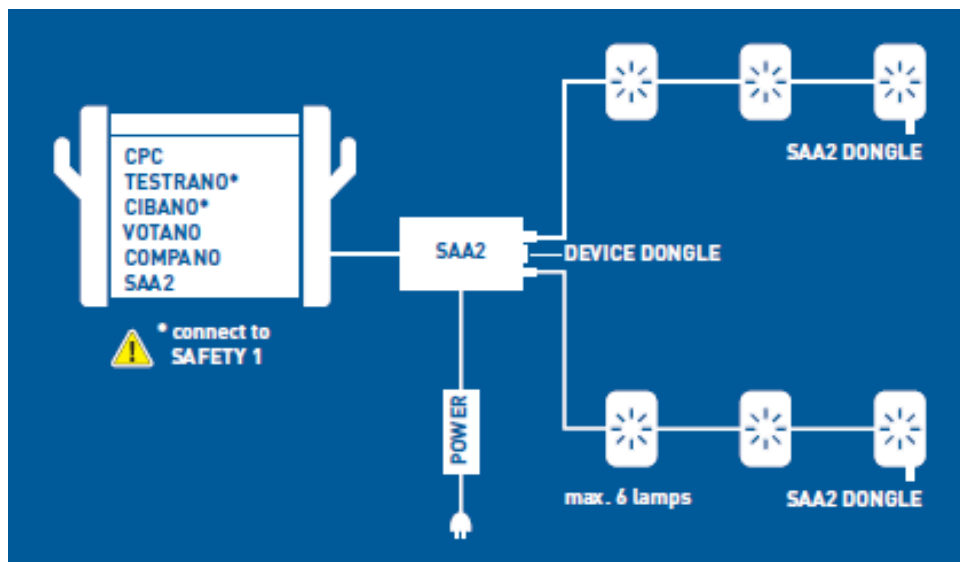


Figure 10: Connecting the SAA2 to the test system, the SAA2 control unit power supply, a maximum of 6 x SAA2 signal lamps and the SAA2 dongles.

5.3 Connection

To connect the SAA2 system to the main device:

1. Make sure that the main device used with the SAA2 is switched off.
2. Press the **Emergency switching off button** on the main device or test system (in case of VOTANO 100 the **Emergency switching off button** on SAB1 safety box) and lock the main device with a physical key (CPC 80 and CPC 100) or by pressing the software lock button (TESTRANO 600 and VOTANO 100).

NOTE! CIBANO 500 and COMPANO 100 do not have a separate physical key nor do they have a software lock function.



WARNING

Death or severe injury caused by high voltage or current possible.

- ▶ Always place the SAA2 control unit in the working area.

3. Place the SAA2 control unit close to the main device and position the SAA2 signal lamps so that they are clearly visible for all operators and if possible also so that the lamps surround the test area. Use the magnetized surface to place the signal lamp on metallic objects, or fix it by using the tripod screw, or by using the mounting ring. Make sure that the signal lamps are firmly in place and that the **Emergency switching off buttons** are easily accessible.

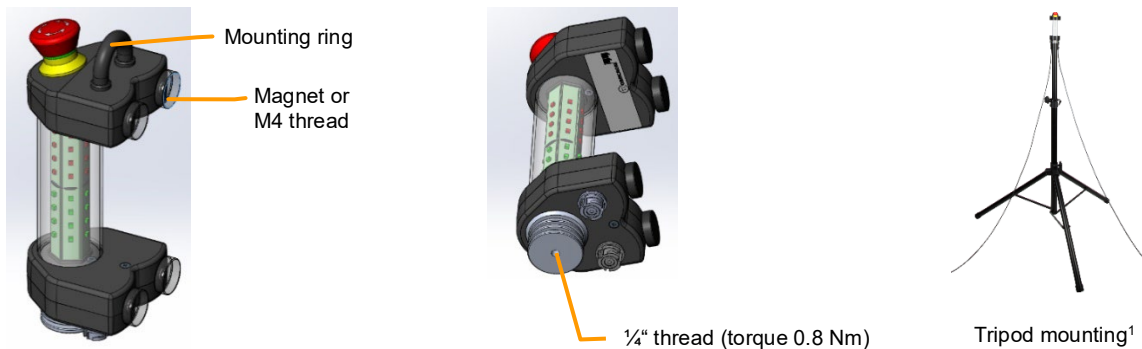


Figure 11: Mounting options

4. Connect the delivered power supply to the SAA2 control unit and connect the mains plug of the power supply to the power outlet.



WARNING

Death or severe injury caused by high voltage or current possible.

- ▶ Use SAA2 only with the original power supply delivered by OMICRON.
- ▶ The OMICRON power supply DC side negative is connected to the ground (PE).

5. Remove the *Safety Connector Dongle* from the **SAFETY** connector on the main device and plug it in the **SAFETY OUT** connector of the SAA2 control unit. In case of VOTANO 100 remove SAB1 connector from VBO2 **SAFETY** output connector.

NOTE! Alternatively, you can connect another SAA2 control unit or other *Safety Accessory* as described in this Supplementary Sheet to the **SAFETY OUT** connector of the control unit instead of the *Safety Connector Dongle*, in which case you must plug the *Safety Connector*

Dongle to the **SAFETY OUT** connector of the last cascaded *Safety Accessory*.
In case of *VOTANO 100* connect the *SAB1* to the **SAFETY** output connector of the last daisy chained *SAA2*.

NOTE! For *CIBANO 500* and *TESTRANO 600* connect *SAA2* only to the **SAFETY OUT 1** connector of the main device.



WARNING

Death or severe injury caused by high voltage or current possible.

- Only use the delivered cables to connect the control unit to the main device and the signal lamps to each other or to the control unit.

6. Connect the *SAA2* signal lamps to the **CH 1** and/or **CH 2** connector(s) of the control unit with the connection cable. You can cascade up to six lamps in any channel combination according to the wiring diagram on the bottom of the control unit. Then the signal lamps should flash alternatively in green and red.
7. Terminate any free **CH 1** or **CH 2** connectors on the *SAA2* control unit and the free connectors on the *SAA2* signal lamps with the *SAA2* dongles.



Figure 12: The use of *SAA2* dongles

8. Connect the **SAFETY IN** connector of the control unit to the **SAFETY** connector of the main device with the safety interface cable and firmly tighten the locking thumb screws. Then the signal lamps should light with the same color as the signal light on the main device (→ Table 3 for detailed information).
9. Unlock the **Emergency switching off button** on the main device or test system and unlock the main device with the key or via screen (*CIBANO 500* and *COMPANO 100* do not have a lock). If all signal lamps light continuously green, the main device/test system is ready for operation.
10. With the controls on the front panel of the control unit, you can set following options: beeper on/off, red signal light continuous or flashing and light intensity (→ Figure 6).

5.4 Testing



WARNING

Death or severe injury caused by high voltage or current possible.

- ▶ Do not connect the main device to the asset under test.
- ▶ When conducting a functional check for the SAA2, set the lowest possible current or voltage value on the main devices.

1. Connect the SAA2 signal lamp to the main device as described in 5.3 Connection.
2. Push the **Emergency switching off button** on a signal lamp. Then all signal lamps should flash green.

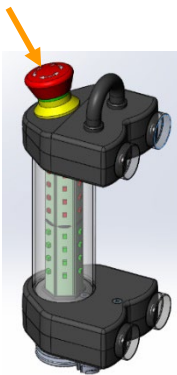


Figure 13: Emergency button activation

3. Put the main device into safe operating condition and try to start the main device with the pressed **Emergency switching off button**. The test system should NOT start.



WARNING

Death or severe injury caused by high voltage or current possible.

- ▶ Ensure that no personnel are in the working area.

4. Release the **Emergency switching off button** and start the main device. Then the signal lamps should change from green to red.



WARNING

Death or severe injury caused by high voltage or current possible.

- ▶ Contact OMICRON technical support if you observe any other behavior than described in this section.

5.5 Disconnection

To disconnect the SAA2 from the main device:

1. Make sure that the main device to which the SAA2 is connected to is switched off.



WARNING

Death or severe injury caused by high voltage or current possible.

- Observe the five safety rules (→ 1.2.2 Five safety rules).

2. Press the **Emergency switching off button** on the main device or test system (in case of *VOTANO 100* the **Emergency switching off button** on *SAB1* safety box) and lock the main device with a physical key (*CPC 80* and *CPC 100*) or by pressing the software lock button (*TESTRANO 600* and *VOTANO 100*).

NOTE! *CIBANO 500* and *COMPANO 100* do not have a separate physical key nor a software lock function.

3. Disconnect the test system from the asset under test as described in the User Manual of the main device.
4. Disconnect the connection cables between the SAA2 control unit and signal lamps and remove the signal lamps.
5. Disconnect the safety interface cable between the SAA2 control unit and the main device.
6. Loosen the locking screws on the *Safety Connector Dongle* and remove the *Safety Connector Dongle* from the **SAFETY** output of the SAA2 control unit and plug it in the **SAFETY** output connector on the main device and tighten the locking screws. For *VOTANO 100* remove the *SAB1* cable from the last daisy chained SAA2 control unit **SAFETY** output connector and after removing all safety accessories insert and attach into the **SAFETY** output connector on *VOB2*.
7. The SAA2 has now been removed and the main device has the required *Safety Accessory Dongle* installed on the **SAFETY** output connector.

5.6 Cleaning

To clean the SAA2, use a cloth dampened with isopropanol alcohol.



WARNING

Death or severe injury caused by high voltage or current possible.

- Before cleaning the SAA2, always disconnect it from the main device.

5.7 Technical data

5.7.1 Control unit

Table 12: SAA2 control unit specifications

Characteristic		Rating
Operating voltage		24 V _{DC} / 40 W
Interface SAFETY IN		9-pin D-SUB-M connector with locking thumb screws
Interface SAFETY OUT		9-pin D-SUB-F connector with locking thumb screws
Safety interface cable		
Length		1.5 m
Max. cascability		2 times (only for <i>CPC 80 / CPC 100</i>)
Cascability		
Max. number of signal lamps per channel		6 per SAA2 control unit, all combinations on channel possible, for example 4/2
Max. number of channels per control unit		2

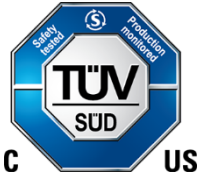
Table 13: Climate

Characteristic			Rating
Temperature	Operating		0 ... +50 °C (+32 ... +122 °F)
	Storage		−30 ... +70 °C (−22 ... +158 F)
Max. altitude	Operating		2 000 m (6 560 ft)
	Storage		12 000 m (40 000 ft)
Humidity			< 95% relative humidity, non-condensing

Table 14: Mechanical data

Characteristic		Rating
Dimensions (w × h × d)		180 × 111 × 44 mm (7.1 × 4.4 × 1.74 in)
Weight		620 g (1.6 lb) without cable

Table 15: Standards conformity

EMC, safety		
EMC	IEC/EN 61326-1 (industrial electromagnetic environment) FCC subpart B of part 15, class A	
Safety	IEC/EN/UL 61010-1	
Other		
Shock	IEC/EN 60068-2-27 (15 g/11 ms, half-sinusoid, 3 shocks in each axis)	
Vibration	IEC/EN 60068-2-6 frequency range 10 ... 150 Hz, acceleration 2 g continuous (20 m/s ² / 65 ft/s ²), 20 cycles per axis	
Humidity	IEC/EN 60068-2-78 5 ... 95% relative humidity, non-condensing, tested at 40 °C (104 °F) for 48 hours	
Protection class ¹	IP20, according to IEC/EN 60529	

¹ Does not apply to the 9-pin D-SUB connector.

5.7.2 Signal lamps

Table 16: SAA2 signal lamp specifications

Characteristic		Rating
Operating voltage		24 V _{DC} / 5 W
Diameter / Signal effect		38 mm / LED (red, green)
Protection rating		IP52
Mounting		Magnet, ¼" tripod screw, mounting ring and four M4 × 6 mm nuts for fixed mounting
Input/output connections		2
Connection cable		
Length		8 m

Table 17: Climate

Characteristic			Rating
Temperature	Operating		−10 ... +50 °C (+14 ... +122 °F)
	Storage		−30 ... +70 °C (−22 ... +158 °F)
Max. altitude	Operating		2 000 m (6 560 ft)
	Storage		12 000 m (40 000 ft)

Table 18: Mechanical data

Characteristic		Rating
Dimensions (w × h × d)		200 × 80 × 70 mm (7.9 × 3.1 × 2.8 in)
Weight		400 g (0.9 lb) without cable

Table 19: Standards conformity

EMC, safety		
EMC	IEC/EN 61326-1 (industrial electromagnetic environment) FCC subpart B of part 15, class A	
Safety	IEC/EN/UL 61010-1	
Other		
Shock	IEC/EN 60068-2-27 15 g / 11 ms, half-sinusoid, 3 shocks in each axis	
Vibration	IEC/EN 60068-2-6 frequency range 10 ... 150 Hz, acceleration 2 g continuous (20 m/s ² / 65 ft/s ²), 20 cycles per axis	
Humidity	IEC/EN 60068-2-78 5 ... 95% relative humidity, non-condensing, tested at 40 °C (104 °F) for 48 hours	
Protection class ¹	IP52, according to IEC/EN 60529	

1. Does not apply to the 9-pin D-SUB connector.

6 SAA3 3-Position Remote Safety Switch

6.1 Designated use

The SAA3 3-Position Remote Safety Switch is an emergency switch for use with OMICRON test systems listed in Table 2 on page 10. The SAA3 triggers the emergency stop of the connected test system.



Figure 14: SAA3 3-Position Remote Safety Switch

Compatibility with main devices

The SAA3 3-Position Remote Safety Switch is intended to be used together with the following main devices:

- *CIBANO 500*
- *COMPANO 100*
- *CPC 80 / CPC 100*
- *TESTRANO 600*

See also the documents listed in the table on following page:

Table 20: Related documents to SAA3 3-Position Remote Safety Switch

Title	Description
CIBANO 500 Getting Started	Contains safety information and use case examples for the <i>CIBANO 500</i> test system.
CIBANO 500 User Manual	Contains safety and operation instructions for the <i>CIBANO 500</i> test system.
COMPANO 100 Getting Started	Contains safety information and use case examples for the <i>COMPANO 100</i> test system.
COMPANO 100 User Manual	Contains safety and operation instructions for the <i>COMPANO 100</i> test system.
CPC Getting Started	Contains safety information and use case examples for the <i>CPC 80</i> and <i>CPC 100</i> test systems.
CPC 80 User Manual	Contains safety and operation instructions for the <i>CPC 80</i> test system.

CPC 100 User Manual	Contains safety and operation instructions for the <i>CPC 100</i> test system.
CPC 100 Reference Manual	Contains detailed hardware and software information for the <i>CPC 100</i> test system including relevant safety instructions.
CPC 100 PTM User Manual	Contains information on how to use <i>Primary Test Manager</i> (PTM) with <i>CPC 100</i> test system.
TESTRANO 600 Getting Started	Contains safety information and use case examples for the <i>TESTRANO 600</i> test system.
TESTRANO 600 User Manual	Contains safety and operation instructions for the <i>TESTRANO 600</i> test system.

6.2 Operation



WARNING

Death or severe injury caused by high voltage or current possible.

Malfunction of the SAA3 3-Position Remote Safety Switch may lead to dangerous situations.

- ▶ Always test the SAA3 Position Remote Safety Switch before putting it into operation as described later in this chapter.

The SAA3 3-Position Remote Safety Switch has three operating positions shown in the following figure.



Figure 15: Operating positions of the SAA3 3-Position Remote Safety Switch

Table 21: SAA3 operating positions

Operating position	Action	Description
I	Do not press the switch.	Emergency off is activated.
II	Press the switch into the middle position.	No activation of emergency off.
III	Press the switch all the way.	Emergency off is activated.

6.3 Connection

To connect the SAA3 3-Position Remote Safety Switch to the main device:

1. Make sure that the test system's main device used with the SAA3 is switched off.
2. Press the **Emergency switching off button** on the main device or test system and lock the main device with a physical key (*CPC 80* and *CPC 100*) or by pressing the software lock button (*TESTRANO 600*).

NOTE! *CIBANO 500* and *COMPANO 100* do not have a separate physical key nor a software lock function.

3. Remove the *Safety Connector Dongle* from one of the **SAFETY** output connectors on the main device side panel and store it for later use.
4. Plug the serial interface connector of the SAA3 switch into the **SAFETY** output connector of the main device as shown in the following figure.



Figure 16: Connecting the SAA3 3-Position Remote Safety Switch (main unit in example *CIBANO 500*)

NOTE! Tighten the locking thumb screws of the connector firmly to ensure stable contact of the SAA3 with the main device.

5. Unlock the **Emergency switching off button** on the main device or test system and unlock the main device with the key or via screen (*CIBANO 500* and *COMPANO 100* do not have a lock). If all signal lamps glow continuously green, the main device/test system is ready for operation.

6.4 Testing



WARNING

Death or severe injury caused by high voltage or current possible.

High voltage or current outputs may occur when testing the SAA3 3-Position Remote Safety Switch.

- ▶ Ensure that no personnel are in the danger zone.
- ▶ Set the lowest possible current or voltage value on the main device.
- ▶ Do not touch or come close to any part connected to the output of the device.

1. Connect the SAA3 3-Position Remote Safety Switch as described in “6.3 Connection”.
2. Unlock the **emergency switching off** button on the main device or test system and unlock the main device with the key or via screen

NOTE! *CIBANO 500* and *COMPANO 100* do not have a separate physical key nor a software lock function.

3. Test the functionality of the SAA3 3-Position Remote Safety Switch as follows:
 - a. Start by not pressing the SAA3 switch (Figure 15 part I).
The main device / test system signal lights should glow **continuously green** indicating that all outputs are switched off.
Try to start the selected test. The SAA3 safety circuit should prevent this and the green signal light on the device / test system should be continuously on.
 - b. Press the SAA3 switch until it is in the fully pressed position (Figure 15 part III).
The main device / test system signal lights should glow **continuously green** indicating that all outputs are switched off.
Try to start the selected test. The SAA3 safety circuit should prevent this and the green signal light on the device / test system should be continuously on.
 - c. Press the SAA3 switch half-way into mid position (Figure 15 part II).
The main device / test system signal lights should glow **continuously green** indicating that all outputs are switched off, but the safety circuit now allows the main device / test system to control the output and the main device / test system is ready for operation.

The main device / test system signal lights will change to **flashing red** when the START button on the main device / test system is pressed to start the selected test and the outputs will be switched on.

If the device does not switch on despite the SAA3 switch being pressed half-way into mid position, push the emergency switching off button on the main device, check the system again and repeat all steps.

If the system still does not switch on, contact OMICRON Support (→ “Support” on page 48).

If the SAA3 switch is fully pressed or not pressed at all during the test, the safety circuit will switch off the outputs of the main device / test system and the signal lamps will continuously light up green.

6.5 Disconnection

To disconnect the SAA3 from the main device:

1. In case of *TESTRANO 600*:

- a. Press the software lock button and then switch off the main device to which the SAA3 is connected to.

In case of *CPC 80*, *CPC 100*, *CIBANO 500* or *COMPANO 100*:

- b. Switch off the main device to which the SAA3 is connected to.



WARNING

Death or severe injury caused by high voltage or current possible.

- Observe the five safety rules (→ 1.2.2 Five safety rules).

2. Press the **Emergency switching off button** on the main device or test system and lock the main device with a physical key if available (*CPC 80* and *CPC 100*).

NOTE! *CIBANO 500* and *COMPANO 100* do not have a neither a separate physical key nor a software lock function.

3. Disconnect the main device/test system from the asset under test as described in the User Manual of the main device.
4. Disconnect the SAA3 3-Position Remote Safety Connection cable from the **SAFETY** output connector of the main device.
5. Connect the *Safety Connector Dongle* in to the **SAFETY** output connector of the main device.
6. The SAA3 has now been removed and the main device has the required *Safety Accessory Dongle* installed on the **SAFETY** output connector.

6.6 Cleaning

To clean the SAA3, use a cloth dampened with isopropanol alcohol.



WARNING

Death or severe injury caused by high voltage or current possible.

- Before cleaning the SAA3, always disconnect it from the main device.

6.7 Technical data

Table 22: SAA3 specifications

Characteristic	Rating
Operating voltage	12 ... 15 V _{DC}
Interface	9-pin D-SUB connector with locking thumb screws
Cable	
Length	15 m (49.2 ft)

Table 23: Mechanical durability

Characteristic	Rating
OFF-ON-OFF	100 000 operations min.
OFF-ON	1 000 000 operations min.

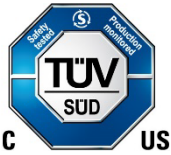
Table 24: Climate

Characteristic		Rating
Temperature	Operating	−10 ... +55 °C (+14 ... +131 °F)
	Storage	−30 ... +70 °C (−22 ... +158 °F)
Max. altitude	Operating	5 000 m (16 400 ft)
	Storage	12 000 m (40 000 ft)

Table 25: Mechanical data

Characteristic	Rating
Dimensions (w × h × d)	174 × 61 × 44 mm (6.9 × 2.4 × 1.7 in)
Weight	1.38 kg (3.0 lb) with cable

Table 26: Standards conformity

Safety	
Safety	EN 61010-1
	
Other	
Shock	IEC/EN 60068-2-27 15 g /11 ms, half-sinusoid, 3 shocks in each axis
Vibration	IEC/EN 60068-2-6 Frequency range 10 ... 150 Hz, acceleration 2 g continuous (20 m/s ² /65 ft/s ²), 20 cycles per axis
Humidity	IEC/EN 60068-2-78 95% relative humidity, non-condensing Tested at 40 °C / 104 °F for 48 hours
Protection class ¹	IP66, according to IEC/EN 60529

1. Does not apply to the 9-pin D-SUB connector.

7 CP Strobe Warning Lamp

7.1 Designated use

The *CP Strobe*¹ Warning Lamp flashes whenever the connected test system may carry dangerous voltages and currents. The brightness is reduced when used in combination with the SAA1 Beeper Dongle on the *CPC 80/100*.

Compatibility with main devices

The *CP Strobe* Warning Lamp is intended to be used together with the following main devices:

- *CIBANO 500*
- *CPC 80 / CPC 100*
- *TESTRANO 600*

See also the documents listed in the following table:

Table 27: Related documents to *CP Strobe* Warning Lamp

Title	Description
CIBANO 500 Getting Started	Contains safety information and use case examples for the <i>CIBANO 500</i> test system.
CIBANO 500 User Manual	Contains safety and operation instructions for the <i>CIBANO 500</i> test system.
CPC Getting Started	Contains safety information and use case examples for the <i>CPC 80</i> and <i>CPC 100</i> test systems.
CPC 80 User Manual	Contains safety and operation instructions for the <i>CPC 80</i> test system.
CPC 100 User Manual	Contains safety and operation instructions for the <i>CPC 100</i> test system.
CPC 100 Reference Manual	Contains detailed hardware and software information on the <i>CPC 100</i> including relevant safety instructions.
CPC 100 PTM User Manual	Contains information on how to use <i>Primary Test Manager</i> (PTM) with <i>CPC 100</i> test system.
TESTRANO 600 Getting Started	Contains safety information and use case examples for the <i>TESTRANO 600</i> test system.
TESTRANO 600 User Manual	Contains safety and operation instructions for the <i>TESTRANO 600</i> test system.

¹ *CP Strobe* is discontinued and replaced by the SAA2

7.2 Operation



Figure 17: *CP Strobe* Warning Lamp



Figure 18: *CP Strobe* Warning Lamp

The following table describes the states of the *CP Strobe* Warning Lamp.

Table 28: States of the *CP Strobe* Warning Lamp

State	Description	Operating condition
On or Flashing	Outputs of the test system may carry dangerous voltages and currents. DO NOT enter the high-voltage test area.	 Dangerous operating condition
Off	Outputs of the test system are disabled. KEEP FOLLOWING the five safety rules because voltage might be still present on the test object.	Safe operating condition

7.3 Connection

To connect the *CP Strobe* Warning Lamp to the main device*:

* **NOTE!** *CP Strobe* is compatible only with *CIBANO 500*, *CPC 80 / CPC 100* and *TESTRANO 600*.

1. Make sure that the test system's main device to which the *CP Strobe* is connected to is switched off.
2. Press the **Emergency switching off button** on the main device or test system and lock the main device with a physical key (*CPC 80* and *CPC 100*) or by pressing the software lock button (*TESTRANO 600*).

NOTE! *CIBANO 500* does not have a separate physical key nor a software lock function.



WARNING

Death or severe injury caused by high voltage or current possible.

- ▶ Always place the *CP Strobe* Warning Lamp in the working area.

3. Position the *CP Strobe* Warning Lamp so that it is clearly visible for all operators and if possible in all directions around the test area. Use the magnetized bottom to place the warning lamp on metallic objects. Make sure that the warning lamp is settled firmly.
4. Remove the *Safety Connector Dongle* from the **SAFETY 1** output connector on the main device side panel.



WARNING

Death or severe injury caused by high voltage or current possible.

- ▶ Only use the delivered *CP Strobe* connection cable for connecting the *CP Strobe* Warning Lamp to the main device.
- ▶ Always place the connection cable in the working area.

5. Connect the **Test system** connector of the *CP Strobe* connection cable to the **SAFETY 1** connector of the main device. Firmly tighten the connector screws.
6. Connect the Strobe connector of the *CP Strobe* connection cable to the *CP Strobe* Warning Lamp. Firmly tighten the Strobe connector's locking nut.
7. Connect the *Safety Connector Dongle* to the **SAFETY** output connector of the *CP Strobe* connection cable. Firmly tighten the *Safety Connector Dongle*'s locking thumb screws.

NOTE! Alternatively, instead of the *Safety Connector Dongle*, you can connect the SAA3 3-Position Remote Safety Switch to the **Safety connector** of the *CP Strobe* connection cable.

8. Unlock the **Emergency switching off button** on the main device or test system and unlock the main device with the key or via screen.

NOTE! *CIBANO 500* does not have a separate physical key nor a software lock function.

9. If all signal lamps light continuously green, the main device/test system is ready for operation.



Figure 19: CP Strobe Warning Lamp connected to the main device (here CIBANO 500) with the CP Strobe connection cable

7.4 Testing

To test the CP Strobe Warning Lamp:

1. Disconnect all test leads and cables – except the CP Strobe connection cable – from the main device. Do not connect any cables during the test of the CP Strobe Warning Lamp.
2. Release the **Emergency switching off button** on the front panel of the main device.
3. Create an arbitrary manual test as described in the User Manual of the main device.

NOTE! See one or more of the following manuals:

- CIBANO 500 User Manual
 - CPC PTM User Manual
 - TESTRANO 600 User Manual
4. Execute the created test by clicking **Start** in the *Primary Test Manager* workspace and pressing the **Measurement Start/Stop** button on the front panel of the main device.
 5. Now, the CP Strobe Warning Lamp should flash while the test is running.
 6. Press the main device's **Measurement Start/Stop** button.
 7. Press the main device's **Emergency switching off button**.



WARNING

Death or severe injury caused by high voltage or current possible.

- ▶ Contact OMICRON technical support if the *CP Strobe* Warning Lamp is not flashing during the test.

7.5 Disconnection

To disconnect the *CP Strobe* Warning Lamp from the main device:

1. Make sure that the main device used with the *CP Strobe* Warning Lamp is switched off.
2. Press the **Emergency switching off button** on the main device.
3. Disconnect the *CP Strobe* connection cable from the *CP Strobe* Warning Lamp and the main device.
4. Disconnect the *Safety Connector Dongle* from the *CP Strobe* connection cable.
5. Connect the *Safety Connector Dongle* to the **SAFETY** output connector of the main device.
6. The *CP Strobe* has now been removed and the main device has the required *Safety Accessory Dongle* installed on the **SAFETY** output connector.

7.6 Cleaning

To clean the *CP Strobe* Warning Lamp, use a cloth dampened with isopropanol alcohol.



WARNING

Death or severe injury caused by high voltage or current possible.

- ▶ Before cleaning the *CP Strobe*, always disconnect it from the main device.

7.7 Technical data

Table 29: CP Strobe specifications

Characteristic	Rating
Operating voltage	12 ... 15 V _{DC}
Interface	9-pin D-SUB connector with locking thumb screws
Cable	
Length	15 m (49.2 ft)

Table 30: Climate

Characteristic	Rating
Temperature	Operating –10 ... +55 °C (+14 ... +131 °F)
	Storage –30 ... +70 °C (–22 ... +158 °F)
Max. altitude	Operating 5 000 m (16 400 ft)
	Storage 12 000 m (40 000 ft)
Humidity	< 85% relative humidity, non-condensing

Table 31: Mechanical data

Characteristic	Rating
Dimensions (w × h × d)	86 × 86 × 83 mm (3.4 × 3.4 × 3.3 in)
Weight	179 g (0.39 lb) without cable

Table 32: Standards conformity

EMC, safety	Rating
EMC	IEC/EN 61326-1 (industrial electromagnetic environment) FCC subpart B of part 15, class A
	

Support

When you are working with our products, we want to provide you with the greatest possible benefits. If you need any support, we are here to assist you.



OMICRON Support – get in touch

[omicronenergy.com/support](https://www.omicronenergy.com/support)

At our support hotline, you can reach well-educated technicians for all your questions.

Make use of our 24/7 hotlines:

Americas +1 713 830-4660 or +1 800-OMICRON

Asia-Pacific +852 3767 5500

Europe / Middle East / Africa +43 59495 4444

Additionally, you can find the service center or sales partner closest to you at

www.omicronenergy.com



OMICRON Customer Portal – stay informed

my.omicronenergy.com

Browse through the knowledge library and find manuals, application notes, conference papers, and much more.

Download the latest software updates and learn about upcoming events.



OMICRON Academy – learn more

[omicronenergy.com/academy](https://www.omicronenergy.com/academy)

Learn more about your product in one of the training courses offered by the OMICRON Academy.