

# SATD1 | DIN RAIL SAFETY AND ISOLATING TRANSFORMER

## Mounting and operating instructions



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## SAFETY AND PRECAUTIONS

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Read all the information, the datasheet, Modbus map, mounting and operating instructions and study the wiring and connection diagram before working with the product. For personal and equipment safety, and for optimum product performance, make sure you entirely understand the contents before installing, using, or maintaining this product.



For safety and licensing (CE) reasons, unauthorised conversion and /or modifications of the product are inadmissible.



The product should not be exposed to abnormal conditions, such as extreme temperatures, direct sunlight or vibrations. Long-term exposure to chemical vapours in high concentration can affect the product performance. Make sure the work environment is as dry as possible; avoid condensation.



All installations shall comply with local health and safety regulations and local electrical standards and approved codes. This product can only be installed by an engineer or a technician who has expert knowledge of the product and safety precautions.



Avoid contacts with energised electrical parts. Always disconnect the power supply before connecting, servicing or repairing the product.



Always verify that you apply appropriate power supply to the product and use appropriate wire size and characteristics. Make sure that all the screws and nuts are well tightened and fuses (if any) are fitted well.



Recycling of equipment and packaging should be taken into consideration and these should be disposed of in accordance with local and national legislation / regulations.



In case there are any questions that are not answered, please contact your technical support or consult a professional.

## PRODUCT DESCRIPTION

SATD1 series are compact single-phase safety isolating transformers designed for T35 DIN-rail mounting. They provide safe electrical isolation of the input and output. They are also suitable for creating SELV and PELV circuits because of the limitation on the output voltage. The SATD1 safety isolating transformers are short circuit and overload protected with a built-in PTC device in the primary winding.

## ARTICLE CODES

Code	Primary voltage, [VAC]	Secondary voltage, [VAC]	Power, [VA]	No-load loss, [W]	No-load secondary voltage, [VAC]	Efficiency, [%]	Enclosure	
SATD1-12/25	230 ±10 %	12 ±5%	25	5,3	13,9	79	4 module version	
SATD1-12/40			40	5,5				
SATD1-12/63			63	9,9	13,5	80	5 module version	
SATD1-24/25		24 ±5%		25	5,3	27,4	79	4 module version
SATD1-24/40				40	5,5			
SATD1-24/63				63	9,9	26,2	80	5 module version

## INTENDED AREA OF USE

- General use, applications where safe electrical isolation of the inputs and outputs is required
- Electric appliances where 24 VAC or 12 VAC is required
- Industrial applications where delivery of SELV (safety extra-low voltage) or PELV (protective extra-low voltage) is required
- Connecting loads that need to be isolated from the main supply and creation of interference suppression
- Supplying loads that must have a safe isolation and interference suppression from the main supply
- For indoor use only

## TECHNICAL DATA

- Primary voltage: 230 VAC ±10 %.
- Secondary voltage: 12 VAC ±5 % or 24 VAC ±5 %, depending on the product version
- Frequency: 47–63 Hz
- Output power: 25 VA / 40 VA / 63 VA, depending on the product version
- Test / insulating voltage: 4 kV AC RMS, between primary and secondary winding
- Short circuit current: < 2,0 A
- Construction class: II
- Insulation class: B (130°C)
- Resin encapsulated
- DIN rail mounting
- Protection standard: IP30 (according to EN 60529)
- Operating ambient conditions:
  - ▶ Temperature: max. 40 °C
  - ▶ Rel. humidity: < 90% rH (non-condensing)

## STANDARDS

- Low Voltage Directive 2014/35/EC
  - EN 60529:1991 Degrees of protection provided by enclosures (IP Code) Amendments AC:1993, A1:2000, A2:2013, AC:2016-2 and AC:2019-02 to EN 60529
  - EN 61558-2-6:2009 Safety of transformers, reactors, power supply units and similar products for supply voltages up to 1 100 V - Part 2-6: Particular requirements and tests for safety isolating transformers and power supply units incorporating safety isolating transformer
- RoHs Directive 2011/65/EU – Restriction of use of certain hazardous substances in electrical and electronic equipment

## WIRING AND CONNECTIONS

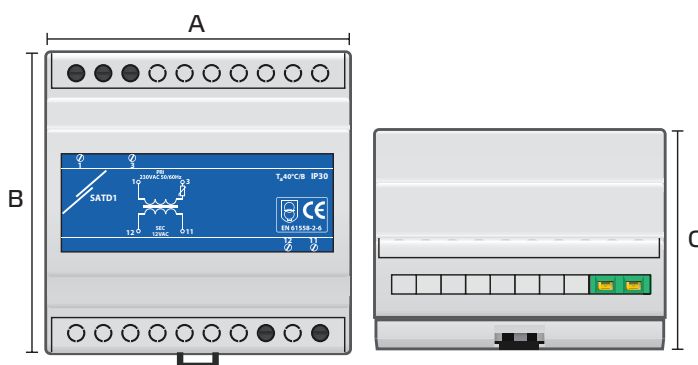
<b>SATD 1-xx/25</b>	1, 3 (Primary side)	230 VAC ±10%, 50–60 Hz
<b>SATD 1-xx/40</b>	9, 10 (Secondary side)	12 / 24 VAC ±5% / 25 VA or 40 VA
<b>SATD 1-xx/63</b>	1, 3 (Primary side)	230 VAC ±10%, 50–60 Hz
	11, 12 (Secondary side)	12 / 24 VAC ±5% / 63 VA
<b>Connections</b>	Cable cross section	max. 2,5 mm <sup>2</sup>

## MOUNTING INSTRUCTIONS IN STEPS

Before you start mounting the SATD1 transformer, read carefully “**Safety and Precautions**” and follow these steps:

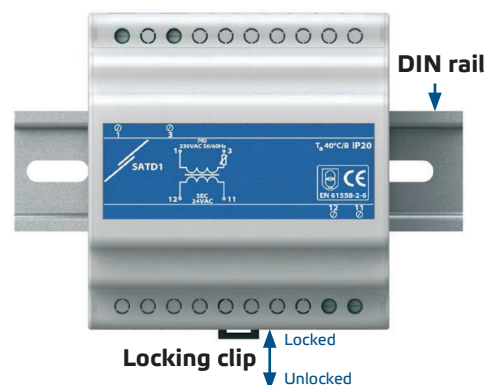
1. Slide the unit along the guides of a standard 35 mm DIN rail and secure it to the rail by means of the black locking clip on the enclosure. Mind the correct position and mounting dimensions shown in **Fig. 1 Mounting dimensions** and **Fig. 2 Mounting position**.

**Fig. 1 Mounting dimensions**



(dim in mm)	A	B	C
<b>SATD1-12/25</b>	70	94	73
<b>SATD1-12/40</b>	70	94	73
<b>SATD1-12/63</b>	87,5	94	73
<b>SATD1-24/25</b>	70	94	73
<b>SATD1-24/40</b>	70	94	73
<b>SATD1-24/63</b>	87,5	94	73

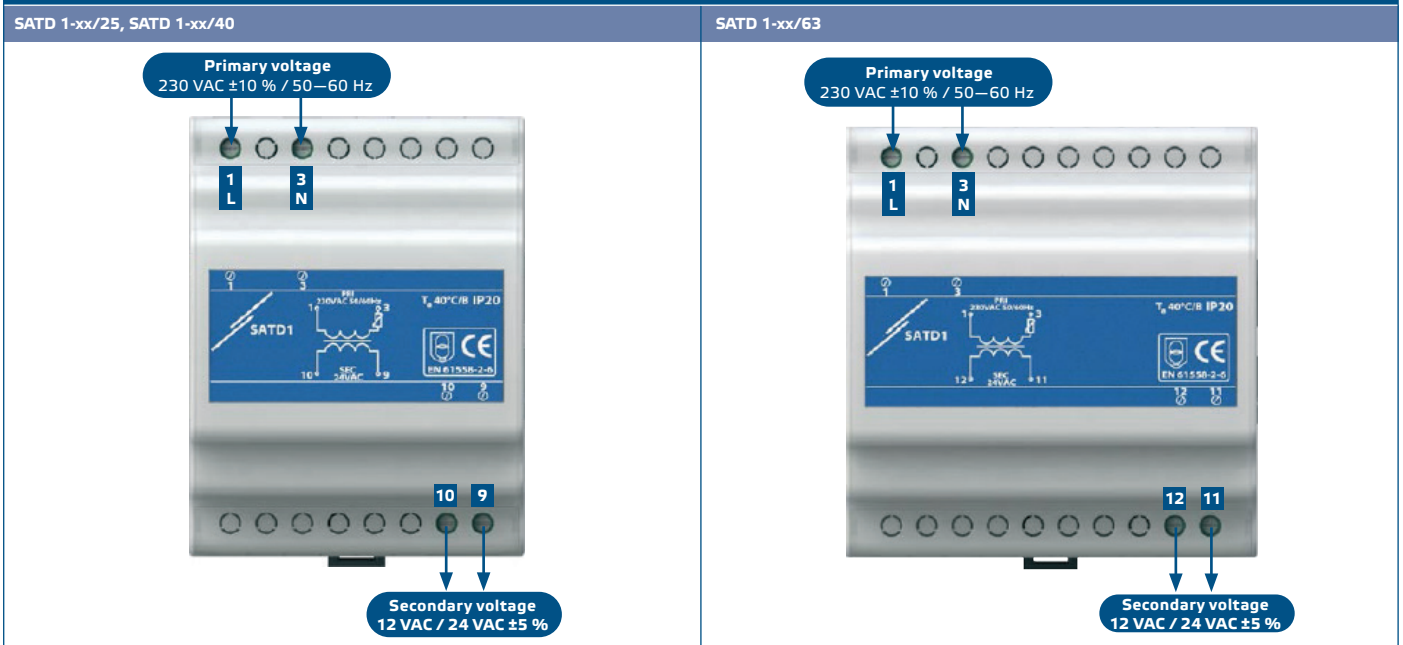
**Fig. 2 Mounting position**



2. Switch off the mains supply.

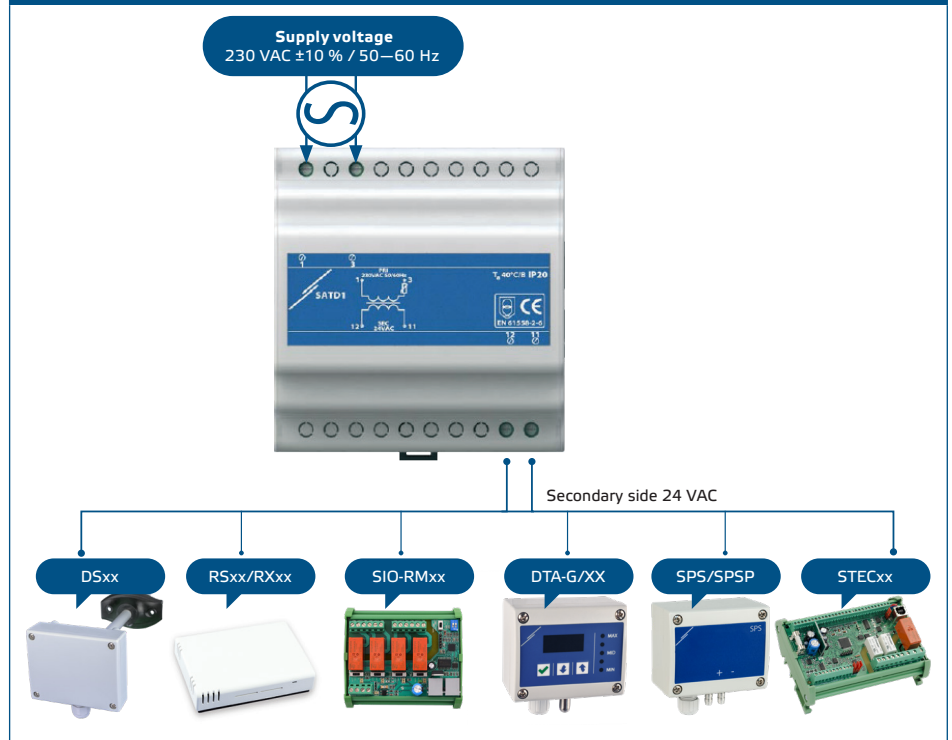
- Having made sure the main supply voltage is within the admissible input rating, connect the cables to the primary side terminal block as shown in **Fig. 3 Wiring diagrams** adhering to the information in section **“Wiring and connections”**.

**Fig. 3 Wiring diagrams**



- Switch on the mains supply and check if the output voltage (secondary side) is appropriate.
- Switch off the mains supply and connect the cables to the secondary side adhering to the wiring diagram.
- Switch on the mains supply and make sure the output current does not exceed the product rating.

**Example**



## ATTENTION

*Excessive current from the transformer may cause overheating and activate temperature protection. The power is restored automatically after the transformer has cooled down or the load has been lowered or removed.*

## NOTE

*Install appropriate protective circuit on the primary and secondary sides (a time lag blown fuse or time delay circuit breaker, according to the transformer specifications).*

## VERIFICATION OF INSTALLATION INSTRUCTIONS

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Safe operation depends on proper installation. Before start up, ensure the following:

- The main supply is connected correctly.
- Protection is provided against electrical shock.
- The cables are the appropriate size and fuse-protected.
- There is sufficient air flow around the unit.

## ATTENTION

*High voltage! The unit is supplied with electrical energy at voltages high enough to inflict personal injury or threat to health. Avoid contact with the unit when in operation!*

## ATTENTION

*Hot surface! The surface of the unit may become hot and cause burns if touched. Avoid contact with the unit when in operation!*

## ATTENTION

*Disconnect and confirm that there is no live current flowing to the unit before servicing.*

## ATTENTION

*Avoid direct sunlight!*

## TRANSPORT AND STORAGE

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Avoid shocks and extreme conditions; stock in original packing.

## WARRANTY AND RESTRICTIONS

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Two years from the delivery date against defects in manufacturing. Any modifications or alterations to the product after the date of publication relieve the manufacturer of any responsibilities. The manufacturer bears no responsibility for any misprints or mistakes in this data.

## MAINTENANCE

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In normal conditions this product is maintenance-free. If soiled, clean with a dry or damp cloth. In case of heavy pollution, clean with a non-aggressive product. In these circumstances the unit should be disconnected from the supply. Pay attention that no fluids enter the unit. Only reconnect it to the supply when it is completely dry.