ABOUT SINUS UPS FROM MILLETEKNIK

The SIN inverter is an Off-line UPS that steps in and replaces the supply from the mains in the event of a mains failure, until the mains returns (or the batteries are completely discharged). SIN inverters are designed with the latest switching technology and microprocessor monitoring, for: Highest efficiency and operational reliability, providing long life for both electronics and batteries. Well protected with , protection against overtemperature, overload, short circuit. Complete self-test including advanced battery test. The units are installation and service friendly: Compact volume. Modular structure.

The UPS is charged with a built-in power supply and is powered further by batteries in the event of a power failure.

SAFETY - READ THIS FIRST

- The unit must be installed by a qualified person.
- It is the installer's responsibility that the system is suitable for intended use.
- Documents accompanying the system must be kept in its immediate vicinity.
- The system should not be connected to the mains during installation.
- All information is subject to change.
- Instructions for use in Swedish in the original[1].

DANGER

Dangerously high voltage.

Wait one (1) minute after power has been disconnected from the unit.

About translation of this document

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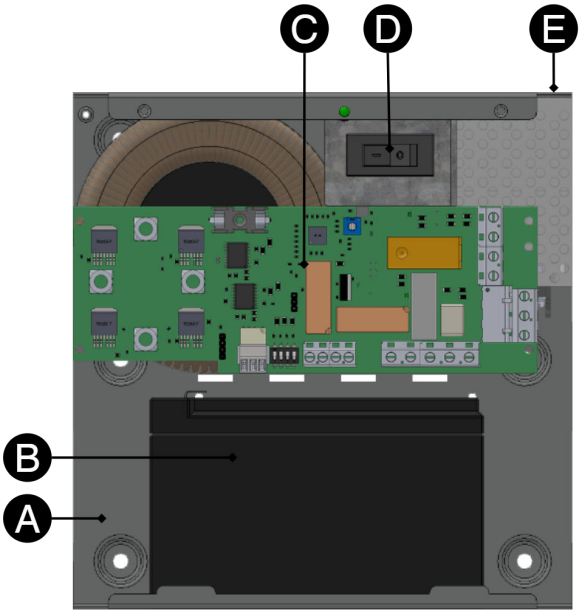
[1]Translations in languages other than Swedish are only indicative and have not been verified. Translation must always be checked against the Swedish original to ensure correct information.

COMPONENT OVERVIEW



Component overview

Letter	Explanation
A	Cabinet in powder-coated sheet metal.
B	Battery.
C	Motherboard.
D	Fuse.
E	Cable entries

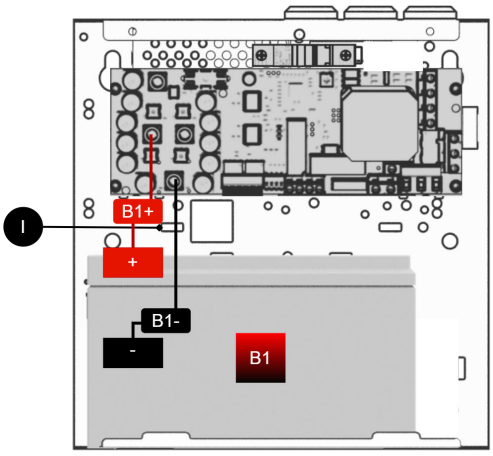
ENCLOSURES

Mounting

Use the appropriate screw for mounting on the wall, Screw for mounting on the wall is not included.

CONNECTION 230 V

In: Battery connection



Overview of incoming mains and battery connection

I	Battery wiring

Connect Phase/Neutral/Earth (PE) incoming on motherboard

Load disconnector incoming mains (in: 230 V)

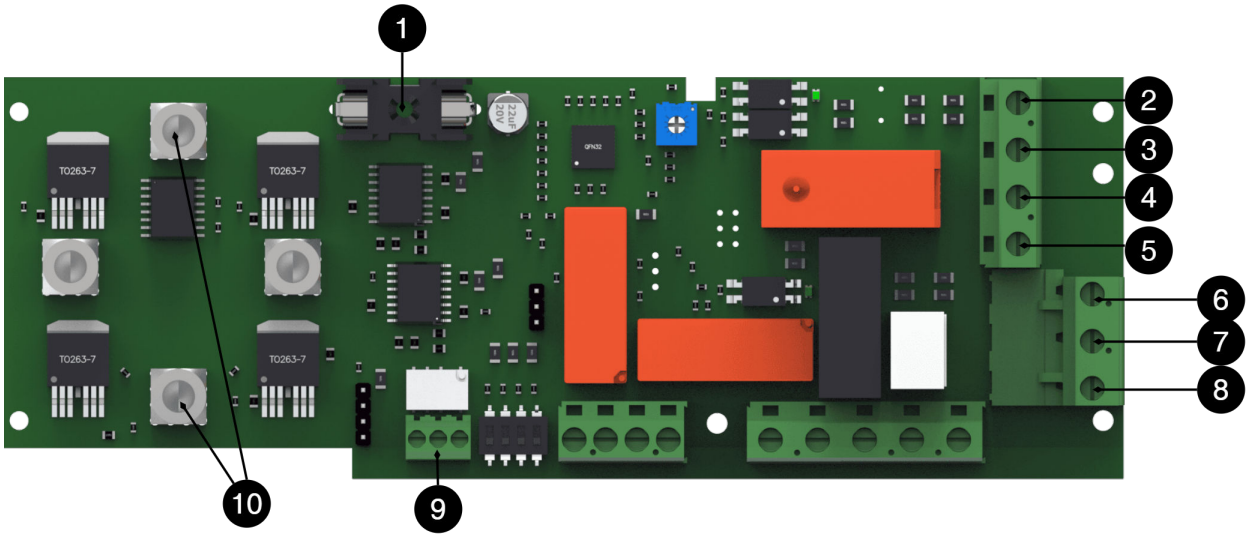
For maximum safety, always disconnect from the mains before installation and service. Connect a load disconnector (circuit breaker) to the incoming cable from the mains. Place it easily accessible and label it clearly. With a load disconnector installed, incoming voltage can be easily interrupted during service and function tests.

OUT: 230 V

Output phase/load to PICTO marked 5 on circuit board overview (always voltage out). Output phase/load to (EMERGENCY LIGHT) marked 4 on circuit board overview (only energized in case of mains failure). Output zero, to ZERO, marked 3 on circuit board overview. Protective ground, to GND, labeled 2 on circuit board overview.

MICROSINUS

Short description: Microsinus



Circuit board overview, explanation

No	On circuit board	Explanation
1	F1	Charging fuse
2	P5:4	Outgoing protective earth, PE (protective earth).PE
3	P5:3	Outbound Zero, Zero.
4	P5:2	Outgoing phase/emergency light, 230 V out in case of mains failure.
5	P5:1	Output phase/load, always 230 V out.
6	P4: PE	230 V in, PE
7	P4:N	230 V in, N
8	P4:L	230 V in, Phase
9	P1:1-3	Total alarm, NO, Com. NC.
10	BAT+/BAT-	Battery wiring

ALARM CONNECTION

Self-test and alarm for mains failure

Total alarm for self-test: Connect total alarm for self-test (Self Diagnosis).

P1:1-3, incorrect charging voltage (over/undervoltage), aged battery - when the battery should be replaced, or non-functioning inverter to circuit board terminal P1:1-3. Alarm - contact NO and CO.

COMMISSIONING - HOW TO START THE UNIT

After connection, start-up must take place in the following steps:

Commissioning - the order

Step	Explanation
1	Switch the fuse to 0/OFF and open the cabinet.
2	Connect input and output cable and alarm.
3	Close the cabinet and switch the fuse to ON/1.
4	Connect to the mains.
5	The system starts up automatically. LED indication on the cabinet door flashes until it lights up solid green. The UPS is commissioned and activated. The load is fed directly from the mains in normal mode and from the batteries via the inverter in battery operation. Switching time is typically 20ms.
6	Temporarily disconnect mains voltage to test that the UPS is working (connected load continues to be powered in battery mode).
7	Reconnect to mains voltage.

CARE INSTRUCTIONS UPS

The unit is maintenance-free when installed in a room temperature indoor environment +15°C—+25°C. However, the batteries should be changed after 10-12 years to maintain high guaranteed safety. In the extended temperature range +5°C—+15°C/+25°C—+30°C, the batteries will age twice as fast. Further colder or warmer ambient temperature means that reliability is at risk.

Battery replacement UPS

WARNING
Fuse on the lid does not interrupt current (230 V) but only interrupts voltage to batteries (24 V).

Step	Explanation
1	Set fuse "0" and open the cabinet. This disconnects batteries. The device is still energized.
2	For safety's sake, also disconnect the mains voltage.
3	Disconnect the battery cables and replace the battery. Be careful not to short-circuit the battery! Note and be careful with orientation regarding battery poles +/- and the location of battery cables!
5	Connect the battery cables. Be careful not to short-circuit batteries!
6	Close the electrical cabinet and set the fuse to "1".
8	Reconnect the mains if it has been disconnected.
9	The SelfTestSystem starts up automatically. LED indication on the cabinet door flashes until it lights up steady GREEN. The UPS is commissioned and activated. The load is fed directly from the mains in normal mode and from the batteries via the inverter in battery operation. Switching time is 20 ms.
10	Temporarily disconnect mains voltage to test that the UPS is working (connected load continues to be powered in battery mode).
11	Reconnect to mains voltage.

DIMENSIONING UPS

Dimension the connected load so that it is, in total, as large as the inverter's maximum rated power (W), preferably less to partly obtain safety margins, and partly to compensate for losses in connections/cabling and the load which means greater actual power consumption from the inverter than the specified rated power of the load. Take temporary starting power into account, so that it does not exceed the specified maximum - short-term - starting power (VA) of the inverter. Back-up load operation should take place within one hour of the grid failure occurring, as the inverter consumes power at idle, which gradually drains the batteries.

ALARM / STATUS ON INDICATOR DIODE

Alarm is shown on the indicator diode on the cabinet door.

Mains operation/mains interruption alarm: During normal mains operation, the LED on the front panel is constantly lit. In the event of a mains failure, the inverter starts in battery operation, whereby the LED flashes "1 blink" ORANGE so that when the time for any set time delay of the mains alarm occurs, the LED blinks "2 blinks" ORANGE. In the event of a "mains failure" alarm, the alarm contact switches to contact between NO-CO.

FRONT PANEL AND STATUS INDICATORS

SIN UPS 200W S

Indicator diode	Text	Explanation
Green, solid glow	OK	The device is working normally
Green blinks	Mains Failure / Mains Failure	230 V mains failure
Yellow flashes	Aged batteries / Aged batteries	Battery needs to be replaced
Red, solid light	Over- or under voltage / UPS error / Over- or under voltage or UPS failure	Over temperature, over current or feedback error
Black / off	Deep discharge protection / Deep discharge protection	Deep discharge protection has kicked in

FAQ UPS

Control measures in case of alarm UPS - Overvoltage, too high charging current

If the charging voltage in normal operation exceeds 27.9 V, the charging is disconnected.

Check with a multimeter that the device's charge does not exceed 27.9 V.

Contact support for further assistance with adjusting the voltage of the power supply unit.

Test load in UPS (part of self-test system)

The unit is tested weekly against an internal test load. This is to check that the output voltage is sufficient for UPS operation and thus that the batteries are not aged.

Are alarms given when batteries are recharged after a power outage?

No alarms are given when the batteries are charged after a mains failure.

Technical facts alarm: Overvoltage

If the charging voltage in normal operation exceeds 27.9 V, the charging is disconnected. An alarm is also given on potential-free relay switching.

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SIN

SIN - UPS Product sheet / technical data

UPS SINUS 200W S

TECHNICAL SPECIFICATIONS

These technical specifications are subject to change without notice.

SINUS UPS NAME, ARTICLE NUMBER AND E-NUMBER

Name, article number and email number

Name	Article number	E-number
SINUS UPS 200W S	SM01U0011FP002B70	52 136 20

MAXIMUM RATED POWER

Brand effect.

Maximum rated power	Continuous effect
SIN 200W S	200 W

ABOUT UPS

The UPS are designed with the latest switch technology and microprocessor monitoring, for maximum efficiency and reliability, providing long life for both electronics and batteries. UPS is well protected with protection against overtemperature, overload, short circuit.

- Complete self-test including advanced battery test.

The units are installation and service friendly: - Compact volume.

NOTE! This translation is not verified and the information should always be cross-checked with the swedish original.

FIXED INSTALLATION

The product is intended for fixed installation. The battery backup must be installed by a qualified installer.

Areas of use

SINUS UPS is mostly used for camera surveillance, PoE switches and other security systems. Sinus UPS is also used for gates and gate control of smaller and larger industrial and garage doors.

- Camera surveillance,
- PoE switches and other security systems.
- Gate and door control of smaller and larger industrial and garage doors.

Regulations and certifications

REQUIREMENTS THAT THE PRODUCT MEETS

The product meets the following requirements.

EMC:	EMC Directive 2014 / 30EU
Electricity:	Low voltage directive: 2014/35 / EU EN 62368-1
CE:	CE directive according to: 765/2008
Emission:	EN61000-6-: 2001 EN55022: 1998: -A1: 2000, A2: 2003 Klass B, EN61000-3-2: 2001
Immunity:	EN61000-6-2:2005, EN61000-4-2, -3, 4, -5, -6, -11
LVD	EN60950

NOTE
The product is part of electrical systems, is subject to the relevant electrical and safety directives and is not a machine according to the Machinery Directive (2006/42/EC).

CE

Circuit boards - Technical data

TECHNICAL DATA: CEO 3

Info	Explanation
Article title	CEO3
Product description	CEO 3 is the next generation circuit board for simpler battery backups. Advanced functions that were not previously possible in simpler battery backups are now available as standard. CEO 3 is a reliable heart in simpler battery backups with fewer components than before, which reduces the environmental impact.
Measure	120 x 55 mm x 52 mm
Voltage form	Enfas sinus
Fuses	See table: Fuses
Fuse on output	24 V
Outputs	Output: four load outputs 1-4 which are prioritized load outlets. (= always voltage).
Insurance	Load output: + secured.
Indication	Display showing operating status, alarms and faults. Operating indication: one indication diode per load output +/-. Solid green light = normal operation.

230 V VOLTAGE IN

230 V voltage input

Voltage	Explanation / comment
Voltage in:	230V -15%, + 20% in mains operation.
Mains power:	charger max 0.4A + load.

230 V OUTPUT VOLTAGE

230 V output voltage.

Voltage OUT	Explanation / comment
Voltage out:	230 V - 10% in battery operation.
Voltage form:	Single-phase sine voltage.
Efficiency, approx:	90%
Idle power, approx:	10 W

BATTERY CHARGE

I / O according to DIN 41773 Current limitation.

PROTECTION

Protection.

Type of protection	Explanation
Current limitation, electronic:	Type 300% of rated capacity.
Short-circuit protection:	Shutdown within 5 sec in case of heavy overload / short circuit according to UPS EN62040-1-1 standard. Automatic restart when mains voltage returns.
Depth discharge protection:	When the battery terminal voltage is less than 19 V.
Overcharge protection:	Disconnection of charging voltage during overcharging.
Automatic fuse:	Batteries are secured.
Optional: Ground fault circuit breaker:	Can be installed on output (extra protection option according to EN62040-1-1).

FUSES MINISINUS V8

Fuses.

On circuit boards	Fuse	Explanation
F1	T16A	Battery fuse

SELF-TEST

Self test.

Type of self-test	Explanation
Battery charge	Continuous monitoring of battery chargers.

Type of self-test	Explanation
Battery aging	Automatic test loading of batteries under high, short-term discharge current to detect battery aging. The test compares measured battery capacity with programmed values to give an alarm when the battery has lost 20% - 40% capacity of new value and should be replaced.
Inverters	Test load of UPS (corresponding rated power over internal test load) to check function and sufficient output voltage.

ALARM

All alarms occur on potential-free relay switching.

Alarm.

Alarm type	Explanation
Sum Alarm, Self-Test:	Incorrect charging voltage (over- or under-voltage), aged battery that should be replaced or a malfunctioning inverter.

ALARM MICROSINUS - IN DETAIL

Alarm Microsinus

Alarm	Explanation
Battery aging:	Battery failure test is activated when the weekly test is performed. The weekly test starts the UPS for 6 seconds and loads the test load after one second. The UPS measures the battery voltage before and at the end of the test. Battery failure is given if the final voltage is lower than 24.0 V or if the voltage decreased by more than 2.5 V before and after the test.
Undervoltage:	Tested every 45 minutes. The battery is disconnected for 100 ms and when the voltage from the power supply is less than 13.45 V (no hysteresis) the alarm is activated.
UPS error:	Activated when the weekly test is performed. Sources of error: no feedback, overcurrent or overtemperature.
Overvoltage:	Overvoltage is tested every second and if the system voltage is higher than 13.95 V an alarm is given. Alarm for overvoltage returns when the voltage goes below 13.7 V.

Technical data enclosures

ENCLOSURES - TECHNICAL DATA S

Info	Explanation
Name	S
Enclosure class	IP 20
Measure	Height: 230 mm, width: 216 mm, depth: 85 mm.
Height units	-
Mounting	Wall
Ambient temperature	+ 5 ° C - + 40 ° C. For best battery life: + 15 ° C to + 25 ° C.
Environment	Environmental class 1, indoors. 20% ~ 90% relative humidity
Material	Powder coated sheet
Color	White
Cable entries, number	3
Batteries that fit	1 pc 12 V 2.3 Ah or 2 pcs 12 V 2.3 Ah or 1 pcs 12 V, 7.2 Ah.
Place for fan	No

Batteries - recommended, not included

BATTERIES ARE NOT INCLUDED THEY ARE SOLD SEPARATELY

Batteries are sold separately.

7.2 AH, 12 V AGM BATTERY

Fits in	Number of batteries
SINUS UPS 200W S	2

Battery type	V	Ah
Maintenance-free AGM, lead-acid battery.	12 V	7.2 Ah

10+ Design life * battery

Article number	E-number	Article name	Terminal	Measure. Height width depth	Weight per piece	Make
MT113-12V07-01	5230536	UPLUS 12V 7.2Ah 10+ Design Life battery	Flat pin 6.3 mm	151 x 65 x 100 mm.	2.4 kg	UPLUS

*Design life is the shelf life in years for an unused battery. Environmental factors such as heat and load affect the service life. Batteries that have a durability (+10 Design Life) of 10+ years usually need to be replaced after 5-6 years.

Link to the latest information

Products and software are subject to updates, you will always find the latest information on our website.

Sinus UPS

Warranty, support, country of manufacture and country of origin

WARRANTY

The product has a two-year warranty, from the date of purchase (unless otherwise agreed). Support during the warranty period can be reached at support@milleteknik.se or telephone, +46 31-34 00 230. Compensation for travel and / or working hours in connection with locating faults, installing repaired or replaced goods is not included in the warranty. Contact Milleteknik for more information. Milleteknik provides support during the product's lifetime, however, no later than 10 years after the date of purchase. Switching to an equivalent product may occur if Milleteknik deems that repair is not possible. Support costs may (at Milleteknik's discretion) occour after the warranty period has expired.

MANUFACTURER SUPPORT

Manufacturers provide support for the life of the product, however, for a maximum of 10 years after the date of purchase. Switching to an equivalent product may occur if the manufacturer deems that repair is not possible. Support costs will be added after the warranty period has expired.

SUPPORT

Do you need help with installation or connection?

You will find answers to many questions at: www.milleteknik.se/support

Phone: +46 31-340 02 30

Support is open: Monday-Thursday 08:00-16:00, Fridays 08:00-15:00. Closed 11:30-13:15.

SPARE PARTS

Contacted support for questions about spare parts.

SUPPORT AFTER THE WARRANTY PERIOD

Milleteknik provides support during the life of the product, but no longer than 10 years after the date of purchase. Replacement for an equivalent product may occur if the manufacturer deems that repair is not possible. Costs for support and replacement are added after the warranty period has expired.

QUESTIONS ABOUT PRODUCT PERFORMANCE?

Contact sales: 46 31-340 02 30, e-mail: sales@milleteknik.se

CONTACT US

Milleteknik AB

Ögärdesvägen 8 B

S-433 30 Partille

Sweden

+46 31-34 00 230

www.milleteknik.se

COUNTRY OF MANUFACTURE

Country of manufacture / country of origin is Sweden. For more information, contact your seller.

DESIGNED AND PRODUCED BY: MILLETEKNIK AB

Designed and produced by Milleteknik AB

ADDRESS AND CONTACT DETAILS

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Ögärdesvägen 8 B
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www.milleteknik.com

350-120 $ {//d:article [1]/@xml:lang} $