



NOVA FLX L

NOVA 12V 10A FLX L



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1. REVISIONS AND THE EDITION OF THIS DOCUMENT

The current and most recently published edition of this document is available at www.milleteknik.com.

The validity of this document can not be guaranteed, as new editions are published without prior notice.

Original instructions for use: Swedish.¹

Instructions for use, technical data and translations thereof may contain errors. It is always the responsibility of the installer to install the product in a safe manner.

1.1. Symbols

Table 1. Symbol Explanation

Symbols	Name	Explanation
	Warning	Risk of electric shock, improper installation or hot surfaces. Appears in some manuals
	Note	Used for supplementary information that clarifies the text.
	Caution/Important	Indicates the risk of equipment damage or malfunction. Also used for information that is important but not security-related
	Tips	Displays practical advice or shortcuts for installation, operation, or service.
	CE marking	The product complies with applicable EU directives and harmonised standards.

¹Translations in languages other than Swedish are indicative only and not verified. Translation should always be checked against the Swedish original to ensure accurate information





Symbols	Name	Explanation
	Read the manual	Please read manual before installation and service.
	Do not dispose of in household waste	The product is covered by the WEEE Directive and must not be disposed of with household waste, it must be recycled and delivered to a recycling centre.
	Recycling	Packaging, products and other materials that do not contain electronics must be recycled in accordance with local environmental regulations.



READ THIS FIRST!

Electronics, regardless of enclosure, are intended for use in a controlled indoor environment. Mains voltage should be disconnected during installation.

It is the installer's responsibility that the system is suitable for its intended use. Only authorized persons should install and maintain the system.

All information subject to change.

2. INSTALLATION — GENERAL INFORMATION

Installation shall be carried out by a competent electrician in accordance with the applicable national electrical installation rules.

The product is of protection class I and must be connected to a grounded 230 V AC circuit.

- A main switch according to IEC 60947-1 shall be provided in the fixed installation. The switch should be easily accessible and clearly marked with its function.
- The area of the supply cable shall be at least 1,0 mm² and fitted with a fuse T 2,5 A (slow-blown) or equivalent.
- AC and low voltage cables must not be pulled together. Keep separate cable chutes or bundles
- Check that protective earth (PE) is properly connected before turning on voltage.
- Ensure free air circulation around the enclosure at least 100 mm, unless otherwise specified. Ventilation openings must not be covered.
- The product is intended for indoor installation in normal environment (pollution number 2 and indoor class 1).

These general requirements apply to all Milletechnik products with 230 V mains connection.

2.1. Requirements for main switch, fuse and cable area

In order to comply with applicable electrical safety requirements, the installation shall be equipped with a main switch according to IEC 60947-1.



Table 2. Main switch and fuse

Component	Requirements
Main switch	A main switch according to IEC 60947-1 shall be included in the installation and be easily accessible. Separated phase (L) and neutral (N)
Fuse	The supply circuit shall be protected by a fuse or automatic fuse with rated current according to the product specification (normally T 2,5 A slow-blow or equivalent). Refer to the device's nameplate.
Fuses	Approved type according to IEC 60127.
Cross-sectional area (230 V)	At least 1,0 mm ²
Cable length	In the case of longer wiring, voltage drops should be taken into account so that the operating voltage does not fall below 230 V $\pm$ 10% at the unit.
Strain relief	All cables must be properly secured and strain relief checked before energizing the unit.

These requirements apply to all Milletechnik products with 230 V mains connection.

The table below shows recommended cable area for low current installations at different voltages, current strengths and cable lengths. Values are based on copper cable and a maximum voltage drop of approximately 3% to ensure operational reliability.

Table 3. Cable area weak current

V	Current strength (A)	Cable length 10 meters	Cable length 30 meters	Cable length 60 meters	Cable length 100 meters
12 V	2 A	0,75 mm ²	1,5 mm ²	2,5 mm ²	4 mm ²
12 V	5A	1,5 mm ²	2,5 mm ²	6,0 mm ²	-*
12 V	10A	2,5 mm ²	6,0 mm ²	-*	-*
* Cable area would exceed connector terminal dimensions therefore it is not possible with thicker cable than 6 mm ^{1 2}					

3. VARIANT OVERVIEW NOVA

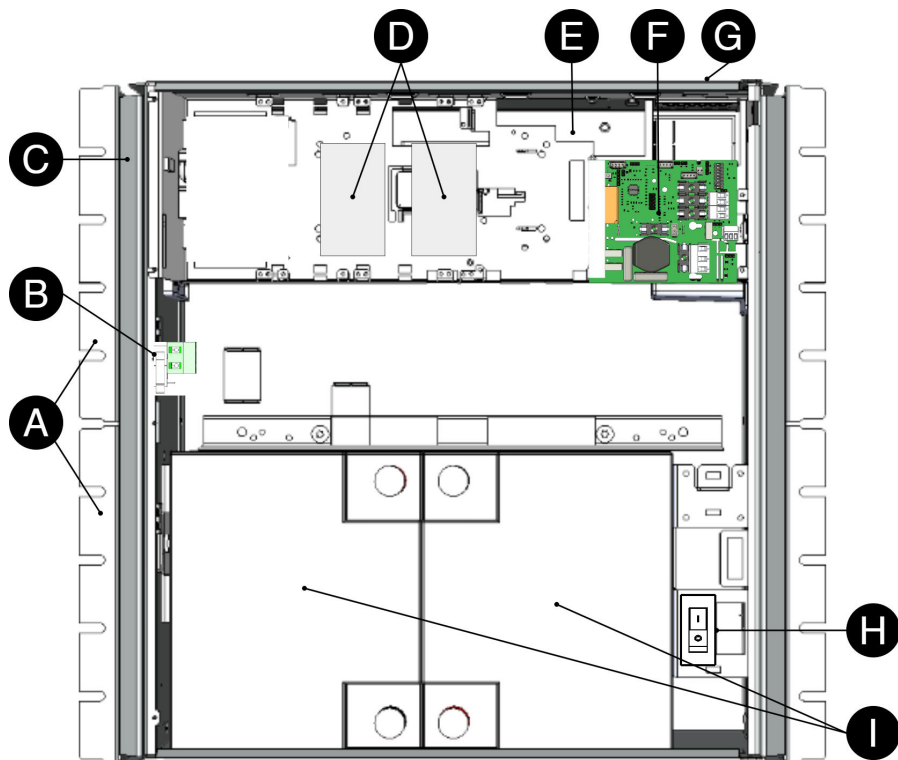
Table 4. Variant overview

Product name	Certified name	Mother-board: PRO1	Mother-board PRO2:	Mother-board PRO2 v3	Mother-board: PRO3
NOVA 12V 10A FLX S	12 V meets the requirements but is not certified.	-	X	-	X
NOVA 12V 10A FLX M	NOVA 13100-FLX	-	X	-	X
NOVA 12V 10A FLX L	It meets the requirements but is not certified.	-	-	-	X
NOVA 24V 5A FLX S	NOVA 25 50-FLX-S	X	X	-	X
NOVA 24V 10A FLX S	NOVA 25 100-FLX-S	X	X	-	X
NOVA 24V 5A FLX M	NOVA 25 50-FLX-M	X	X	-	X
NOVA 24V 10A FLX M	NOVA 25 100-FLX-M	X	X	-	X
NOVA 24V 15A FLX M	NOVA 25 150-FLX-M	X	X	X	-
NOVA 24V 25A FLX M	NOVA 25 250-FLX-M	X	X	X	-
NOVA 24V 5A FLX L	NOVA 25 50-FLX-L	X	X	-	X
NOVA 24V 10A FLX L	NOVA 25 100-FLX-L	X	X	-	X
NOVA 24V 15A FLX L	NOVA 25 150-FLX-L	X	X	X	-
NOVA 24V 25A FLX L	NOVA 27 250-FLX-L	X	X	X	-





4. COMPONENT OVERVIEWNOVA FLX L



Batteries should be placed as in the picture.

Table 5. Component overview

Number	Explanation
A	Bracket, reversible for wall mounting or 19 "rack.
B	Tamper switch.
C	Cabinet in powder-coated sheet metal.
D	Optional card slot.
E	Power supply.
F	Motherboard.
G	Cable entries.
H	Battery fuse.
I	Space for batteries.

5. REQUIREMENTS FOR MAIN SWITCH, FUSE AND CABLE AREA

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Table 7. Cable area weak current

V	Current strength (A)	Cable length 10 meters	Cable length 30 meters	Cable length 60 meters	Cable length 100 meters
12 V	2 A	0,75 mm ²	1,5 mm ²	2,5 mm ²	4 mm ²
12 V	5A	1,5 mm ²	2,5 mm ²	6,0 mm ²	-*
12 V	10A	2,5 mm ²	6,0 mm ²	-*	-*

* Cable area would exceed connector terminal dimensions therefore it is not possible with thicker cable than 6 mm^{1 2}

6. CONNECTION OF BATTERIES, 12 V

Battery wiring is mounted on the circuit board upon delivery. Pictures below only show how to connect wiring.

- Place the batteries in the cabinet with the battery terminals facing outwards, against the cabinet door.
- Connect the battery cable. Red cable on plus and black cable on minus.
- Disconnect the mains power (if possible) before replacing batteries.

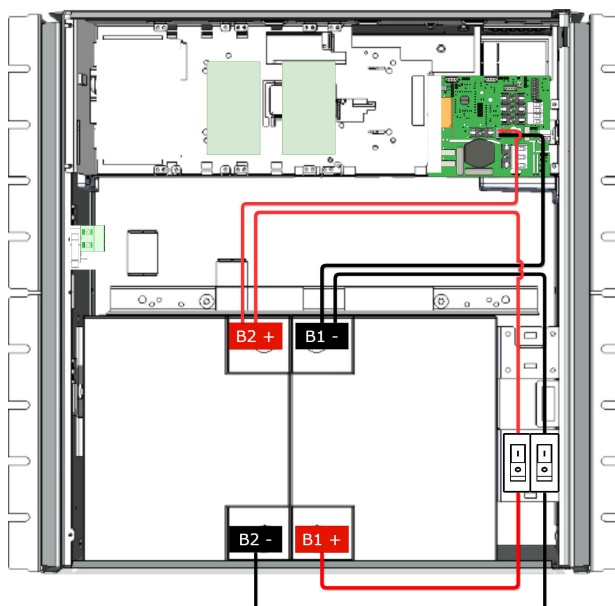




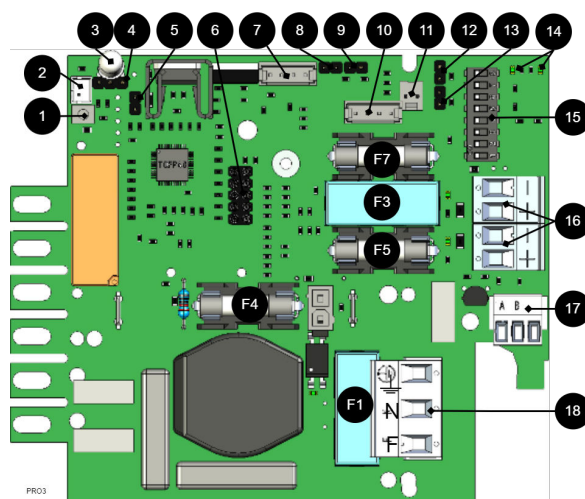
Table 8. Plugging in batteries

No.	Explanation
B1+	Connects to + fuse
B1 -	Connects - fuse and motherboard.
B2+	Connects to + fuse and motherboard.
B2 -	Connects - fuse.

7. PRO3 MOTHERBOARD

7.1. Motherboard - description

Figure 1. PRO3



The motherboard controls the device and distributes power. See technical data for more information.

Table 9. Circuit Board Overview, Explanation

No .	On circuit board	Explanation
1	J24	Control to power supplies. Internal use.
2	J5	1=Oprio 2=external alarm.
3	D9	LED.
4	JU1	For external LED in door.
5	J11	Reset jumper, used when changing batteries.
6	JU6	Connection for relay cards or communication cards or for updating firmware. Only one card or contact at a time can fit.
7	J29	Connection to fan.
8	J101	Connection to tamper contact.
9	J17	Connection to tamper switch from battery box.
10	J35	Not used.
11	J14	Alarm input from external battery fuse, from battery box.
12 and 13	J10 and J100	Alarm from external option card.
14	D18, D19	LEDs show the status of communication (RS-485).
15	S3	Dip switch
16	P2:1-4	Load outputs
17	P3:1-3	Communication connection, RS-485.



No .	On circuit board	Explanation
18	P1:1-3	Connection to the mains.

7.1.1. Fuses

Table 10. Fuses on PRO3 / NEO3

Fuse	Type	Explanation
F1	T2.5A	Mains fuse
F3	T16A	Load fuse 1 - (for P2:2)
F4	T16A	Battery fuse
F5	T3A-T10A*	Load fuse 1+ (for P2: 1)
F7	T3A-T10A*	Load fuse 2 + (for P2:3)
*The size of the fuse depends on the battery backup (rated) power outlet (A) .		



WARNING FOR REPLACING FUSES (CURRENT STRENGTH, A)

There is a risk of damage if the fuse is changed to a larger one than what the unit is delivered with. The function of the fuse is to protect the connected load and cables against damage and fire. It is not possible to change the fuse to a larger one to increase the power output.

7.1.2. Connect load



MAX CURRENT

The maximum current must not be exceeded. Max current is indicated on the rating plate on the device.

If there are one or more connection cards (to increase the number of load outputs), load must be connected there and not on the main board.

Table 11. Load connections

On circuit boards	Explanation
P2: 1	Connection for load 1 +.
P2: 2	Hookup for load 1 -.
P2: 3	Connection for load 2 +
P2: 4	Connection for load 2 -

7.1.3. Connect the mains to the motherboard (PCB)

CONNECT MAINS

Pull wiring through the cable entry on the cabinet.

Before connecting, the supply circuit should be disconnected and voltage-free. Verify that the conductor area and cable type meet the applicable installation rules and that the strain relief and insulation levels comply with the requirements for 230 V AC





After connection, all screw connections should be checked and tightened. Tensioning shall only take place after mechanical protection, caps and housing have been reassembled and comply with the contact protection according to EN 62368-1

Secure F and N with cable ties.



IMPORTANT

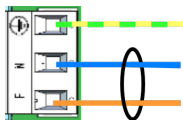
Protective earth (PE) must be connected to the PE terminal on the motherboard. The motherboard is grounded via its mounting points in the enclosure, ensuring proper potential equalization between PCB and enclosure. Also the cover is grounded through ground cable/earth braid between cover and enclosure to maintain continuity and EMC

Mains wiring must be kept separate from other wiring to avoid EMC interference.

The protective earth (PE) must be connected to the PE terminal on the motherboard. The motherboard is grounded via its mounting points in the enclosure, ensuring correct equipotential bonding between the circuit board and the enclosure. The cover is also grounded via a grounding cable / grounding braid between the cover and the enclosure to maintain continuity and EMC function.

Check that the marking on the circuit board matches the wiring order on the terminal block.

Figure 2. Mains connection is made to the terminal block on the motherboard.



Connect the mains cable to the terminal block before it is re-inserted into the motherboard. Secure L (F in picture) and N with cable ties for electrical safety.

Table 12. Electrical network connections

Letter	Explanation
L	Fas, P 1:1.
N	Neutral, P 1:2.
PE	Protected earth, P 1:3.

FILTER CAPACITORS

The products are supplied with the following filter capacitors for standard networks (TN/TT):

Table 13. TN/TT standard network

Type	Location
X2	Phase — Zero (L—N)
Y2	Phase/Zero — Protective ground (one per conductor)

IT Networking

IT networks generate higher transients as the system works phase to phase. Therefore, according to the current standard, capacitors of a higher class are required



Departure from X1/Y1 capacitors can be done but then external transient protection must be installed. For devices to be installed in IT networks, Milletechnik's lightning protection must be fitted to maintain standards.

7.1.4. Dip switch 1-8

Dip-Switch has several different modes:

Table 14. Dip switch 1-8

Dip switch	In mains operation or in battery operation
1	Address for external communication.
2	Address for external communication
3	Address for external communication
4	Address for external communication
5	Sets alarm for mains failure delay
6	Sets alarm for mains failure delay
7	Sets alarm limit for low battery voltage in battery operation.
8	Turns off or turns on LED indication, for everything except alarm in case of triggered tamper contact which is always indicated regardless of dip-switch position.
8 in sequence	Perform battery tests.

ADDRESS SETTING FOR EXTERNAL COMMUNICATION (DIP SWITCH 1-4)

Dip-Switch S1: 1-4 sets addressing.

Table 15. Addressing Dip-Switch 1-4

	Dip: 1	Dip: 2	Dip: 3	Dip:4
Adress 1	ON	OFF	OFF	OFF
Adress 2	OFF	ON	OFF	OFF
Adress 3	ON	ON	OFF	OFF
Adress 4	OFF	OFF	ON	OFF
Adress 5	ON	OFF	ON	OFF
Adress 6	OFF	ON	ON	OFF
Adress 7	ON	ON	ON	OFF
Adress 8	OFF	OFF	OFF	ON
Adress 9	ON	OFF	OFF	ON
Adress 10	OFF	ON	OFF	ON
Adress 11	ON	ON	OFF	ON
Adress 12	OFF	OFF	ON	ON
Adress 13	ON	OFF	ON	ON
Adress 14	OFF	ON	ON	ON
Adress 15	ON	ON	ON	ON

MAINS FAILURE DELAY (DIP 5-6)

It is possible to change the time for when the alarm for a power outage should be given. Use the matrix to set the alarm.

Table 16. Mains failure delay

Alarms for mains failure are given after:	Dip 5	Dip 6
3 seconds	OFF	OFF
30 minutes	ON	OFF
60 minutes	OFF	ON





Alarms for mains failure are given after:	Dip 5	Dip 6
240 minutes (4 hours)	ON	ON

LOW BATTERY VOLTAGE (DIP 7)

Dip: 7 has the same function regardless of whether the unit is in mains or battery operation or whether the tamper switch is held down.

Table 17. Low battery voltage

Alarm for low battery voltage is given when	Dip 7
22,8 V*	ON
24 V	OFF
*25% of battery capacity remains.	

LED (DIP 8)

LED/battery-test always lights up when the door is open.

Dip-switch 8=ON turns off the LED.

Dip-switch 8=OFF turns on the LED.

BATTERY TEST (DIP 8)

To do a battery test, dip 8 needs to change position and five seconds need to pass before the test is initiated.

- If dip 8 in original position is on OFF then switch dip 8 to: ON (wait 5 seconds) and then switch back to OFF.
- If dip 8 in original position is on ON then switch dip 8 to: OFF (wait 5 seconds) and then switch back to ON.

This activates the battery test after 3-8 seconds. The battery test lasts for about 6 seconds and then the LED flashes yellow quickly. Aged battery alarms may be indicated while the battery test is being performed.

Only reset dip 8 when the test is complete.

7.1.5. Reboot to confirm changes in address, battery and alarm settings to parent system

After the dip-switch has been set for various parameters, the device's software needs to be restarted. This is for the new settings to be stored and take effect.



IMPORTANT

Rebooting according to this procedure does not interrupt the output voltage.

Restarting the device software is done by jumpering J11 (PRO3)

In the event of a change of address, the card should be reset once more after 20-30 seconds.



IMPORTANT

Reboot must be done every time a change is made to the device.

NEO cannot be connected to communication/UC.

7.1.6. Reset after battery replacement -PRO3

After battery replacement, the device needs to measure the capacity of new batteries and clear previously set battery capacity. All alarms are cleared from the units memory, statistics remains and can not be cleared.

- Insert jumper on J11 and remove jumper on J11

After doing step, the battery capacity is cleared in the units memory and is ready to read the new battery capacity.

This procedure needs to be done each time the batteries are replaced or when connecting a battery box.



NOTE ON TEST OF BATTERIES

At start-up, it takes 72 hours before the system performs battery tests. This is to ensure fully charged batteries and to collect averages / history for at least 72 hours. Thereafter, every four hours, a qualified cell sample of the batteries is performed.



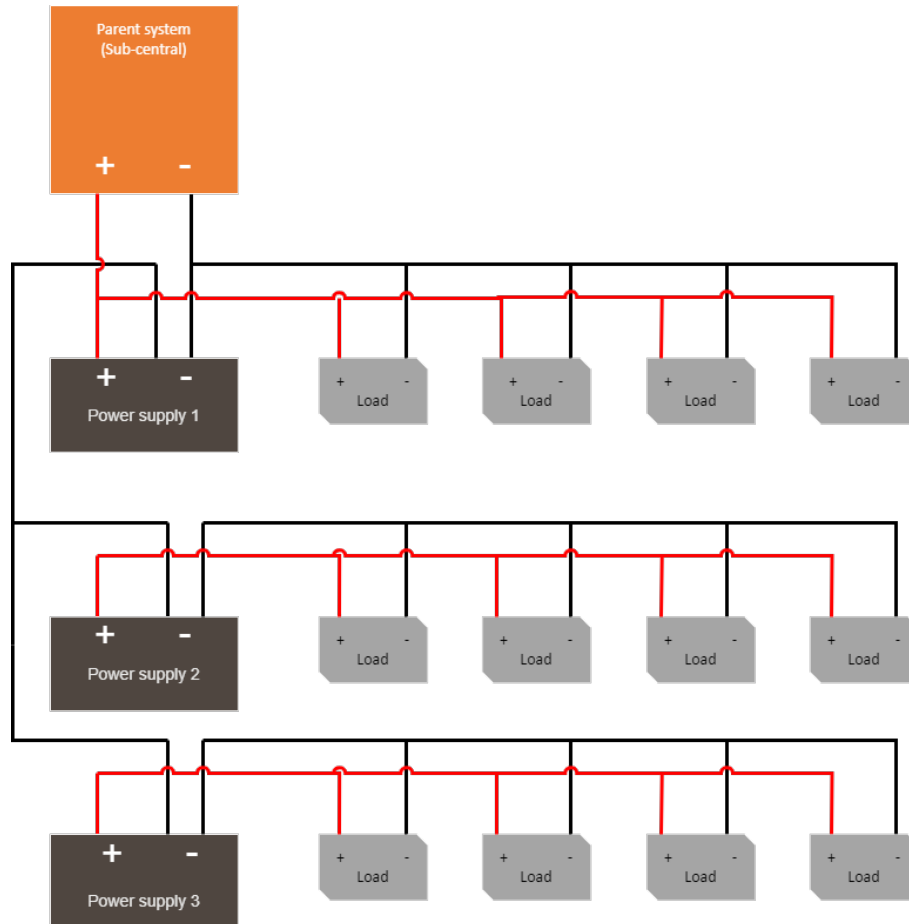
NOTE ON START-UP WITH SHORT-CIRCUITED BATTERIES

Peak current at start-up with short-circuited batteries: Up to 30 A p-p for 200 ms. Always follow the start-up procedure.

8. MULTIPLE UNITS INTO ONE PARENT SYSTEM

To connect several units to a higher system, the load-minus between several battery backups must be connected together.





9. COMMISSIONING - HOW TO START THE UNIT

9.1. Connect in this order

To minimize the risk of short-circuit errors, connect the components to the motherboard in the following order.



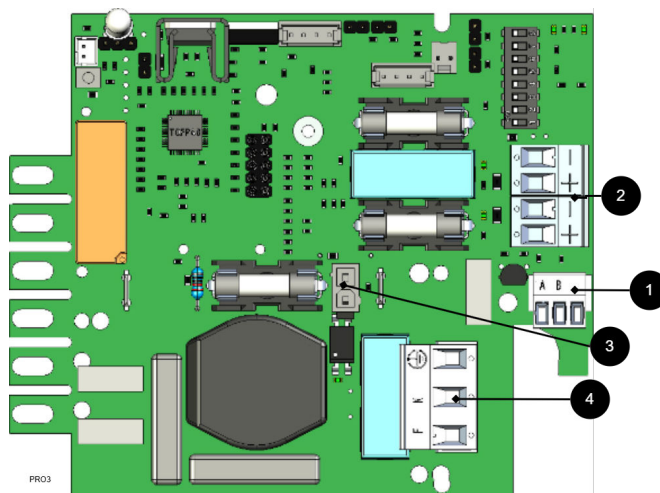


Table 18. Connect in this order

Nr	Explanation
1	Connect alarm.
2	Connect load.
3	Connect batteries
4	Connect mains.



IMPORTANT

For setting dip switches and addressing — see online manual via QR code.

1. connect load, alarm and possibly. other connections.
2. Connect batteries
 - Connect / switch on fuses
3. Screw the mains cable into the terminal block and attach the terminal block to the motherboard.
 - Switch on mains voltage.

The unit works normally when the indicator LED on the outside of the cabinet door lights up with a solid green light. See front panel for other status indications.

It may take up to 72 hours for the batteries to be fully charged.

10. ALARM DISPLAYED ON CABINET DOOR

In normal mode, the indicator LED shows a solid green light.



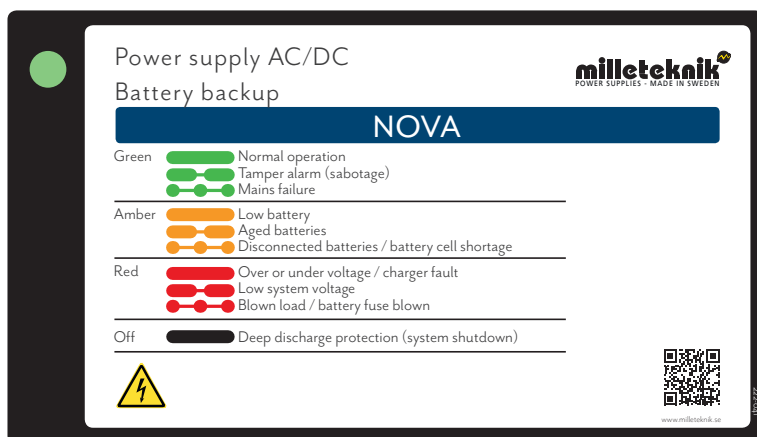


Table 19. The indicator diode shows.

The indicator diode (LED) shows	Explanation
Solid green light	Normal operation.
Slow green flashes	Sabotage alarm.
Fast green flashes	Mains failure.
Solid amber light	Low battery voltage.
Slow amber flashes	Aged batteries.
Rapid amber flashes	Disconnected batteries or battery cell shortage.
Solid red light	Overvoltage or undervoltage or charger fault.
Slow red flashes	Low system voltage.
Rapid red flashes	Blown load or battery fuse has blown.
No light / off	Deep discharge protection is activated. (System shutdown).

When operating system: If the indicator LED is off, deep discharge protection has been activated.

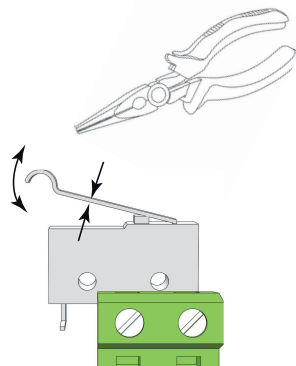


NOTICE

If the indicator light flashes every 15 seconds, the battery is fully charged and the charge is in rest phase to extend battery life. In the event of a power failure during the rest phase, the battery backup switches to battery operation as usual



11. ADJUSTMENT OF TAMPER SWITCH



The tamper switch lever must be in the closed position when the cabinet door is closed. If the alarm goes off ("tamper alarm"), the lever may need to be adjusted.

The lever is adjusted by the following steps:

1. Pinch with pliers in the middle of the lever.
2. Carefully adjust the lever in the desired direction (up / down).
3. Check by closing the door. A click is heard when the contact is closed.



NOTICE

Tamper switch will not give an alarm when closed and locked the door.

12. SAFETY INFORMATION - SERVICE AND TROUBLESHOOTING

- If possible, disconnect the mains supply before starting any work, such as servicing, battery replacement, metering or troubleshooting.
- Remove the battery fuse/plug before working on the DC side.
- Check that all cables are properly connected and grounded before re-energizing the unit.
- The product may contain components that become hot during operation. Avoid touching internal parts immediately after the power has been switched off.
- If fuses blow repeatedly see [Troubleshooting \[19\]](#) or disconnect the unit and contact Milleteknik technical support.
- In case of suspicion of damage, liquid ingress or burnt odour, the product must not be used until it has been inspected by qualified personnel.
- During operation, the housing should be closed and locked (if the device has a lock).
- Only authorized service personnel may perform repairs on the device.
- Use only original fuses and batteries of the same type and value as specified in the manual/product sheet.

Milleteknik is not responsible for damage caused by improper handling, modification or unapproved components.





12.1. Troubleshooting

If the device does not work as expected, go through the following checks:

Table 20. Troubleshooting

Problem	Possible cause	Action
No output voltage.	No mains voltage, fuse triggered or battery failure.	Check the supply, fuses and battery connections.
Battery does not charge.	Faulty battery connection or battery fuse has blown.	Check battery cables and replace battery fuse if necessary.
The device starts but alarms.	Batteries not sufficiently charged or faulty load or battery.	Wait 72 hours until the batteries are fully charged. Ensure that the connected load does not exceed the rated current.
LED flashes.	Information, warning or error.	See panel or manual for explanation.
Fuses blow frequently.	Short circuit or overload.	Check connected devices, change the fuse only after the cause has been resolved.
Unit overheating	High load or insufficient ventilation	Check that the rated current is not exceeded and ensure adequate ventilation around the enclosure.

Control measurement of batteries

In case of troubleshooting, the voltage of the batteries can be checked using a multimeter. Measure each 12V battery separately over the plus and minus pole. Next, measure the entire battery group connected in series. Two 12 V batteries connected in series should provide approximately 24-27 V DC depending on the degree of charge and whether charging is in progress. If measured voltage is significantly lower than expected, check polarity, battery fuse and wiring between battery box and battery backup.

If the problem persists after these checks, contact Milletechnik support and provide the product name, serial number, and a brief description of the fault.

13. PRODUCT SHEET - POWER SUPPLY / BATTERY BACKUP

13.1. Product Sheet

13.1.1. SSF1014 certified* battery backup with communication

Figure 3. NOVA FLX L



NOVA FLX L can be mounted on a wall or in a 19" rack.



13.1.2. Item Information

THE TABLE SHOWS THE NAME, PART NUMBER AND EMAIL NUMBER OF THE PRODUCT

PRODUCT IDENTIFICATION

Table 21. Product designation, part number and email number.

Product designation	Article number	E-number (SE)
NOVA 12V 10A FLX L	FL01P30012P100	52 136 49

13.1.3. Technical description

NOVA is used for powering access systems, alarms and other safety equipment with 12 V DC operation. The device's built-in rectifier converts mains voltage (230 V AC) into stabilized 12 V DC. NOVA is certified according to SSF 1014² for use in security installations from alarm class 1 up to alarm class 4.

Batteries, for example, drive the access system further when the power grid goes down.

Table 22. Quick Facts

Quick Facts	
Supply voltage (V)	230V AC, +/- 10%, 47Hz- 63Hz
Voltage out (V)	12 V DC13.6 V DC, (12 V DC) Also applicable in battery operation.
Current output (A), max load current output.	10A
Batteries ^a .	2 x 45 Ah

^aRecommended. If batteries are included, it is indicated, otherwise batteries are ordered separately

13.1.4. Areas of application

Table 23. Areas of application

Areas of application	Yes	No
Access system (door reader, magnetic lock, electric terminal plate, etc)	✓	
PowerWatch compatible	✓	
Burglar alarm	✓	
SSF certified access systems. Alarm class 1-4	✓	
Communication to subcentral.	✓	

13.1.5. Electrical data

Table 24. Electrical data

Electrical data	
Supply voltage	230V AC, +/- 10%, 47Hz- 63Hz
Charge current	Max 10A
Efficiency ^a .	87%
Standby consumption	1.94 W
Voltage out	12 V DC13.6 V DC, (12 V DC) Also applicable in battery operation.
Current (A) ^b .	10A

^aAt rated load.

^bPower outlet/load is specified as max, normal current output should be 80% of max.

²Not applicable to NOVA 12V 10A FLX L.



Table 25. Fuses

Fuses	
Mains fuse	2.5 A
Load fuses	10A
Battery fuse	(16 A) and 30 A automatic fuse

Table 26. Printed circuit boards and Internal power consumption

Circuit Boards	Internal power consumption (during battery operation)	Other. info
PRO3	< 120 mA	All relays on external alarm board pulled in normal mode.

13.1.6. Load outputs

Table 27. Load outputs

Load outputs	
Number of load outputs	! 2 ^a .

^aLoad outputs share on the total maximum load. The value does not apply per output

Table 28. Total maximum load and recommended load.

Model	Recommended total load (80%) ^a .
10A	8A

^aTypically, 70-80% of the maximum load is recommended in continuous operation, depending on the thermal margins of the product.

13.1.7. Alarm and protection

Table 29. Number of relay on which alarm can be given

Number of Relays	Alarm on switching relay? ^a .
0	✗
4	✓ Can be given on four outputs, with alarm card, otherwise alarm appears in parent system.

^aRelay, alternating potential-free contacts. Ending CO/NO.

Table 30. Alarm over communication and on LED on motherboard PRO3

Alarms	Alarm via communication ^a .	Indication diode on main board.
Network outage	✓	✓
Fuse failure	✓	✓
Sabotage Breakers	✓	✓
Fan failure	✓	
Charger failure, overvoltage	✓	✓
Charger failure, undervoltage	✓	✓
Cell failure or not connected battery	✓	✓
Low system voltage, (system voltage below 24.0 V in mains operation).	✓	✓
Low battery voltage (<24.0 V DC) or power failure	✓	✓
Over-temperature	✓	
Sub-temperature	✓	
Short battery life remaining	✓	
Aged battery	✓	✓
Overcurrent 80%, daily average	✓	



Alarms	Alarm via communication ^a .	Indication diode on main board.
Overcurrent 100%, minute average	✓	
Over current 175%, second average	✓	

^aApplies to communication against the parent system, active only if configuration allows.

Table 31. Alarms

Alarms ^a .	Relay 1/ Alarm output 1	Relay 2/ Alarm Output 2	Relay 3/ Alarm output 3	Relay 4/ Alarm output 4
Network outage	✓	-	-	-
Fuse failure	-	✓	-	-
Sabotage Breakers	-	-	-	✓
Fan failure	-	-	-	-
Charger failure, overvoltage	-	✓	-	-
Charger failure, undervoltage	-	✓	-	-
Cell failure or not connected battery	-	✓	-	-
Low system voltage, (system voltage below 24.0 V in mains operation).	-	-	✓	-
Low battery voltage (<24.0 V DC) or power failure	-	✓	-	-
Over-temperature	-	-	-	-
Sub-temperature	-	-	-	-
Sub-temperature	-	-	-	-
Short battery life remaining	-	-	-	-
Aged Battery**	-	✓	-	-
Overcurrent 80%, daily average	-	-	-	-
Overcurrent 100%, minute average	-	-	-	-
Over current 175%, second average	-	-	-	-

^aAlarm on potential-free relay contact.

Table 32. Alarm and protection

Alarm and protection	Yes	No
Battery charge protection/controlled charging ^a .	✓ Batteries are charged with a maximum of 0.5 A. ^b	
Deep discharge protection, see Battery [23] ^c .	✓	
Overload Protection/Surge Protection	✓	
Over-temperature protection	✓	
Short circuit protection	✓	

^aControlled charging protects and extends battery life.

^bFactory setting. Adjustable in PowerWatch

^cWhen the deep discharge protection is activated, the device turns off and the LED goes out.

13.1.8. Communication and Indications

Table 33. Communication and Indications

Communication and Indications	Yes	No	Other. info.
Communication	✓		
Alarm to subcentral	✓		
PowerWatch ^a .	✓		
Indicators/LEDs	✓		LED displays information and alarms on circuit boards and on the outside of the housing.

^aPowerWatch consists of a cable and software, it is ordered separately.



The PowerWatch is available as an option for the product.

Table 34. Communication protocol

Interfaces	Included/optional	Signal Type/Communication Principle	Protocols
RS-485 ^a	Included	Differential signaling	OSDP
RS-232	Optional	Serial communication (TTL level)	Proprietary protocol
Ethernet	Optional	Packet-based (Ethernet)	TCP/IP
In ¹ 2C	Optional	Two-wire bus	In ¹ 2C

^aFor other brands, the communication interface of the respective manufacturer applies.

13.1.9. Battery

Table 35. Technical data - Batteries

Battery	
Ref. Batteries ^a	2 x 45 Ah
Battery type	Maintenance-free AGM (lead-acid) batteries
Deep discharge protection	Activates when the system voltage drops below about 10 V DC.
Other sizes of batteries that can be used	2 x 28 Ah Other batteries may not be used if certificates are to be maintained.

^aIf batteries are included, it is indicated, otherwise batteries are ordered separately.

13.1.10. Enclosure and Mechanics

Table 36. Enclosure and Mechanics

Enclosure and Mechanics	
Type	Universal enclosure for wall and rack
IP class	IP32
Material	Powder coated sheet metal.
Colour	Black
Height units	10
Cable grommets	4 pcs
Knockout hole	1 pc. on the back
Lock	✓ 2 keys included
Fan in enclosure	✓x

13.1.11. Assembly, installation and eligibility requirements

Table 37. Fitting

Fitting	Yes	No
19" rack.	✓	
Wall.	✓	

Table 38. Installation

Installation	Yes	No
Fixed installation.	✓	



13.1.12. Dimensions, weight and packaging information

Table 39. Dimensions

Dimensions, (WxHxD).	Dimensions with packaging ^a
444 x 437 x 212 mm	550 x 500 x 300 mm

^aDimensions (WxHxD) of product and packaging may differ, this is because the product may be oriented differently in the package.

Table 40. Weight

Net weight	Weight with packaging
12.7 kg	13.8 kg

Table 41. Packaging

Packaging	
Packaging	Cardboard and plastic shock protection. Cardboard and impact protection in cardboard.
Quantity in pack	1 pc.
Packaging Type (GS1 T0137)	BX box.
Conditions EUR pallet	EUR pallets may not be stacked during transport or storage. Stacking may result in damage to product and packaging
Transport environment	The product must be protected from condensation and direct precipitation during transportation.
Transport temperature (without battery)	-30 °C to +70 °C
Storage environment	Dry indoor environment, protected from condensation. Relative humidity: max 95%, non-condensing
Storage temperature without batteries	-20 °C to +60 °C

13.1.13. Contact

Table 42. Contact

Department	
Switchboard	031-340 02 30
Support and technical issues	support@milleteknik.se
Sales	sales@milleteknik.se
WWW	www.milleteknik.se
Address	Ögärdesvägen 8B, 433 30 Partille

13.1.14. About this information

All information is published subject to possible errors. Information is updated without prior notice.

Milleteknik with the associated logo is a trademark of Milleteknik AB.

PowerWatch is a trademark of Milleteknik AB.

Publication date 2026-07-08



13.2. Compliance and regulatory compliance

13.2.1. Delivery time, warranty and terms

Table 43. Delivery time, warranty and terms

Delivery time, warranty and terms	
Warranty period ^a .	The product has a two (2) year warranty against manufacturing defects. The product has a five (5) year warranty against manufacturing defects.
Special warranty conditions	The battery backup should be used in conjunction with UPLUS 10+ Design Life batteries. The fan shall be cleaned annually and replaced if necessary. The average load shall not exceed 80% of the rated capacity of the power supply. Ambient temperature shall not exceed 32°C. Batteries and wear parts are not covered by warranty. See also general terms and conditions.
General Terms and Conditions	ALEM09 with exceptions, see: www.milletechnik.se/conditions/
Support	Telephone support and email support during the warranty period are free of charge. For spare parts that are not covered by warranty, there is a charge
Delivery and stock	
Delivery time ^b .	5 working days. Or as per agreement. Delivery from factory, transportation time is added.

^aIf the device is purchased through a wholesaler or other supplier, other warranty conditions may apply

^bIn the case of larger orders, delivery time increases, acc. to agreement.

13.2.2. Operation and maintenance

Table 44. Operation

Operation	Data	Other. info
Environment	Indoor environmental class 1.	
Operating temperature (recommended)	+15°C to +25°C	For the best battery life. Higher temperatures significantly shorten the life of the batteries.
Operating temperature (permissible) ^a .	+5°C to +40°C	Class 1 according to EN 50131-6/ EN 60839-11
Load, power supply	80%	Average load shall not exceed 80% of the rated capacity of the power supply.
Ventilation, free distance around the enclosure.	100 mm	Ventilation openings must not be blocked or covered.

^aSpecifies the permissible ambient temperature range in which the product can operate without damage. See also table on battery life.

Table 45. Maintenance

Yes	No	Interval	Other. info
✓		Annually	The fan should be cleaned annually. Battery terminal voltage must be measured. Ensure that the average load does not exceed 80% of the rated capacity of the power supply.

13.2.3. Certifications and approvals

Table 46. Approved according to

Complies with	Directives
Emission	EN55032 (CISPR32) Klasse B
Emissions	EN61000-6-2:2001 EN 55022:1998: -A 1:2000, A 2:2003 Class B, EN61000-3-2:2001, EN 55032 (replaces EN 55022)
Immunity	EN61000-6-2:2005, EN61000-4-2, -3, 4, -5, -6, -11 SS-EN 50130-4:2011 Edition 2, EN50131-6
C.E.	CE marking according to Regulation (EC) No 765/2008
RoHS	RoHS Directive 2011/65/EU, including amendment (EU) 2015/863



Complies with	Directives
EMC	EMC Directive 2014/30/EU
Electric (LVD)	Low Voltage Directive 2014/35/EUEN 62368-1

Table 47. Ups

Complies with	Yes	No
EN50081-1, -2, EN55011, EN55022 (B) and EN50082-1, -2, EN61000-4-2, -3, -4, -5.	✓	
The UPS meets the applicable EMC requirements of EN 61000-6-3/6-4 (emission) and EN 61000-6-1/6-2 (immunity).	✓	
EN 62368-1	✓	
EN 62040-1	✓	
EN 16005 ^a .		✗

^aSINUS UPS is a backup power unit (UPS) that meets the applicable parts of the EN 62040 standard series. Compliance with EN 16005 refers to the complete door system and rests with the door manufacturer or system integrator

Table 48. SBF

Complies with	Yes	No
SBF 110:8	✓	

HOW DO CERTIFICATES APPLY IF OPTIONAL IS INSTALLED IN THE DEVICE?

Table 49. Do certificates apply if optional is installed outside the device?

Product Series	Certification	Do certificates apply if optional is installed in the device?
NOVA ^a .	SSF 1014 (Burglary)	Yes

^aThe product is certified together with the parent system. In order for certificates to be maintained, batteries of the same brand must be used as in certification, (

13.2.4. Environmental data

Table 50. Environmental data

Environmental data	J/N	Informație	Other. info.
Building Product Declaration (BPD)	✓	Yes, see iBvd at www.milleteknik.se .	-
REACH Information Obligation (EC) No 1907/2006	✓	Yes, see the DoC at www.milleteknik.se The product complies with REACH Regulation (EC) No 1907/2006.	If empty, the product is not covered.
SVHC substances, CAS/EC	✓	Yes, lead, 7439-92-1/231-100-4	For text, see iBvd at www.milleteknik.se . If blank, substance is missing.
Subject to the RoHS Directive, (EU) 2015/863	✓	Yes, see the DoC at www.milleteknik.se	
WEEE 2012/19/EU	✓	The product contains electrical components or wiring and is covered by the WEEE Directive (2012/19/EU).	If empty, the product is not covered. End-of-life products must be returned to a recycling centre
Battery Regulation (EU) 2023/1542	✗		
SCIP No 2008/98/EC	✓	Yes, registered under the EU Waste Directive where applicable, (2008/98/EC).	If empty, no SCIP number is needed.



Environmental data	J/N	Informație	Other. info.
Conflict minerals (EU) 2017/821	X/X/X/X/✓	No=Gold, Tungsten, Tantalum, Cobalt. Yes=Tin	Tin in solders in printed circuit boards purchased through a Swedish supplier.
Contains nanomaterials: EC 1272/2008	X	The product does not contain nanomaterials.	
Ecodesign 2009/125/EC	Milleteknik's products are intended for professional use and are therefore not directly covered by the Ecodesign Regulation (EU 2019/1782). As some components may be covered, we nevertheless disclose relevant information ^a , where applicable, to provide our customers with confidence in their choice.		
Machine Directive 2006/42/EC	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). Will be replaced by Machinery Regulation (EU) 2023/1230, which will apply in 2027.		
The product is designed and constructed for a long service life, which reduces the environmental impact. The life of the product (except wearing parts) depends on, among other things, environmental factors, mainly ambient temperature, unforeseen load on components such as lightning strikes, external impact, handling errors, etc. Products are recycled, simply because they are modular, by being left at the nearest recycling station or sent back to the manufacturer. ^b Contact your distributor for more information.			

^aStandby consumption and power.

^bCosts incurred in connection with recycling are not reimbursed.



13.2.5. Manufacturer and country of origin

Table 51. Manufacturer and country of origin

Manufacturer ^a	Milleteknik AB
Customs State. Nos.	85044095 ^b
Country of origin	Sweden

^aManufacturer is the trademark indicated on the product, regardless of what is stated in this product sheet.

^bVerify with the Customs Ombud/Customs Service for export/import; alternative classification 85044055 may become applicable if the product is assessed as a battery charger.

13.3. Appendix

13.3.1. Power outlet NOVA FLX

NOVA 12V 10A FLX L	Unit without battery box	Unit with 1 battery box	Unit with 2 battery boxes
Battery	2 st 45 Ah	-	-
Max battery capacity	90 Ah	-	-
According to. SSF1014, Alarm Class 1-2	2.2 A	-	-
According to. SSF1014, Alarm Class 3-4	0.9 A	-	-
I _{max} A (max discharge current)	10 A	-	-
I _{max} b (max charging current)	10 A	-	-
I _{min} is always 0 A.			



13.3.2. Backup operating time on batteries

The reserve operating time in battery operation depends on how large a load is connected to the power supply. If the load varies, as with frequent opening of door locks, the time that batteries can continue to power the security system decreases. To get an estimate of reserve operating times see: www.milleteknik.se/Manualer/FaQ/Reservdrifttider/

13.3.3. Charging current for batteries and battery capacity

The unit reads the connected system load and charges the batteries with available residual current from the power supply. The device performs qualified* battery tests and notifies when batteries need to be replaced. The batteries are charged gently to extend their life and protection is available against overcharging.

Table 52. Charge current

12 V / 24 V	Maximum charging current for batteries
NOVA FLX L	6 A

The battery backup has controlled charging ** (controlled charging) which prevents batteries from being overcharged and extends their service life significantly. The NOVA series must be used with AGM batteries.



NOTE

NOVA 12V 10A FLX S, NOVA 12V 10A FLX M and NOVA 12V 10A FLX L meet the requirements according to EN50131-6 and SSF 1014 but have not been certified.

13.3.4. PowerWatch



Table 53. PowerWatch Ordering Information

Product designation	Item No.	E-number (SE)
PowerWatch	A-OT0000UPG02P2V3P3	52 137 06

Table 54. Alarms that can be set in PowerWatch

Alarms that can be set in PowerWatch
Charger failure, overvoltage
Charger failure, undervoltage
Fan failure, (in case of externally connected fan)
Fuse failure on load
Low battery voltage, in battery operation
Power outage, delay 10 seconds
Disconnected battery





Alarms that can be set in PowerWatch
Unit not calibrated

13.3.5. Eligibility requirements, installation

Eligibility requirements vary between countries. The table summarizes national requirements for fixed installation and connection of equipment with a plug socket, respectively.

Options on the secondary side of the product, such as 12 V, 24 V or 48 V DC, are connected according to the respective instructions. Work on the network connection of the product shall be carried out in accordance with national eligibility requirements

Table 55. Eligibility requirements by country. Applies only to the installation of this product in a fixed network connection

Permission Requirements for Installation	Fixed installation (230 V)	Plug	Other. info
Sweden	✓	✗	Fixed installation may be performed by technicians but shall be under the responsibility of a qualified installer. (Electrical Safety Act, SS 436 40 00) Plug may be connected without authorization.
Norway	✓	✓	Requirements for qualified electricians also for equipment with a plug socket in fixed installations. (NEK 400, DSB)
Finland	✓	✗	Plug may be connected without authorization. (Tukes, SFS 6000)
Denmark	✓	✗	Plug may be connected without authorization. (Safety Board)
Germany	✓	✗	All fixed installations require a qualified electrician according to VDE 0100. Plug sockets may be connected without authorization, but only by person with basic electrical knowledge ("Elektrotechnisch unterwiesene Person")

13.3.6. Reference table: environmental classes according to EN 50130-5 (referred to in EN 50131-6)

Table 56. Reference table: environmental classes according to EN 50130-5 (referred to in EN 50131-6)

Class	Type	Temperature range
Environmental Class 1	Heated indoors (type office/residence).	+5°C to +40°C
Environmental Class 2	Generally indoors (type warehouses/stairwells, not temperature controlled).	-10°C to +40°C
Environmental class 3	Protected outdoors.	-25°C to +50°C
Environmental class 4	Generally outdoors.	-25°C to +60°C

13.3.7. Reference table: manufacturer's stated service life and recommended battery replacement

Table 57. Reference table: manufacturer's stated service life and recommended battery replacement

Battery Type (Design Life) ^a	Battery replacement time in normal operation, +20°C.	Replacement during hot operation, +30°C	Replacement during hot operation, +40°C
3 - 5 years	2 - 3 years	1 - 1.5 years	0.5 - 0.75 years
6 - 9 years	5 - 6 years	2.5 - 3 years	1.2 - 1.5 years
10 - 12 years	6 - 7 years	3 - 3.5 years	1.5 - 1.75 years
15 + years	10 - 12 years	5 - 6 years	2.5 - 3 years

^aValid in case of completely unused battery stored under optimal conditions.

13.3.8. Reserve operating times for different alarm classes - overview

Alarm class	Spare operating time in the event of a power failure	Maximum number of hours of battery re-charging (80%)
EN54-4	-	24 h



Alarm class	Spare operating time in the event of a power failure	Maximum number of hours of battery re-charging (80%)
SBF110: 8	30 h + 10 min	24 h
EN50131-6 grades 1-2	12 h	72 h
EN50131-6 grade 3	24 h	24 h
SSF1014 Alarm class 1/2	12 h	72 h
SSF1014 Alarm class 3/4	30 h	24 h

The table shows the requirements for backup operating time and recharging of batteries for different alarm classes.

13.3.9. About this information

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