

PRODUCT SHEET - POWER SUPPLY FROM MILLETEKNIK

ECO power supply with battery backup

Figure 1.



Name, article number and e-number

Table 1. Name, article number and e-number.

Name	Article number	E-number (SE)
ECO 24V 5A L	LA01C10424P050	52 137 81

Technical description

ECO supplies access control systems, locking systems and other security products in a property powered by 24 V DC. The rectifier in the power supply converts 230 V AC down to 24 V DC

ECO in L-enclosure is a compact and robust power supply with a charger and space for up to 2 x 45 Ah batteries. Three VMC slots provide flexibility for different security installations. The housing is white lacquered with key lock and LED indication. The device has built-in protection against overload, over voltage, over temperature, short circuit and deep discharge. Alarm output for, among other things, power failure, fuse failure and low battery voltage. Controlled Charging protects the batteries and Cold Start enables operation without mains voltage

Table 2. Quick Facts

Quick Facts	Data
Supply voltage (V)	230 V AC - 240 V AC, 47 Hz- 63 Hz.
Voltage out (V)	27.3 V DC, (24 V).
Current output (A), max load current output.	5A.
Batteries ^a	2 x 45 Ah

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

Areas of application

Areas of application	Yes	No
Access system (door reader, magnetic lock, electric terminal plate, etc)	✓	

Electronics

Table 3. Printed circuit boards and Internal power consumption

Circuit Boards	Internal power consumption (during battery operation)	Other. info
CEO-FLX	50 mA	-

Table 4. Electrical data

Electrical data	Data
Supply voltage (V)	230 V AC - 240 V AC, 47 Hz- 63 Hz.
Charge current	Depending on the power outlet. Max 5 A.
Efficiency ^a	86% (5A)87% (10A)
Standby consumption	Data is missing.
Voltage out	27.3 V DC, (24 V).
Voltage out in battery operation	24 in DC.
Fuses	
Mains fuse	
Load fuses	5A.
Battery fuse	16 A.
Current (A) ^b	5A.

^aAt rated load.

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

Load outputs

Table 5. Load outputs

Load outputs	Data
Number of load outputs	2



IMPORTANT

Note that the outputs divide by the total maximum load. The value does not apply per output.

Table 6. Total maximum load and recommended load.

Model	Total Max Load	Recommended total load (80%) ^a
5A	5A	4 A

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

Alarm and protection

Table 7. Number of relay on which alarm can be given

Number of Relays	Alarm on switching relay? ^a
0	X

^aRelay, alternating potential-free contacts.

Table 8. Alarm and protection

Alarm and protection	Yes	No
Alarm output missing requires optional card: Relay/Communication Card ECO Series (CEO-FLX).	X	
Protection		
Short circuit protection	✓	
Deep discharge protection, see Battery [2] ^a .	✓	
Overload Protection/Surge Protection	✓	
Over-temperature protection	✓	
Battery charge protection/controlled charging ^b .	✓	
Cold Start	✓	Starts directly from battery operation without mains voltage.

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

^bControlled charging protects and extends battery life.

Communication and Indications

Table 9. Communication and Indications

Communication and Indications	Yes	No	Other. info.
Communication	✓		Communication with the parent system is not supported.
PowerWatch ^a .	✓		Works with PowerWatch provided the optional communication card is installed.
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.



Table 10. PowerWatch Ordering Information

Name	Item No.	E-number
PowerWatch	A-OT0000UPG02P2V3P3	52 137 06

Table 11. 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
Unconnected battery
Unit not calibrated

Battery

Table 12. Technical data - Batteries

Battery	Data
Battery type	Maintenance-free AGM (lead-acid) batteries.
Deep discharge protection	Activates when the system voltage drops below about 20 V DC.
Recommended Batteries ^a .	2 x 45 Ah

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

Enclosure and Mechanics

Table 13. Enclosure and Mechanics

Enclosure and Mechanics	Data
Enclosure	
IP class	IP20
Material	Powder coated sheet metal.
Colour	White
Height units	10
Cable grommets	5 pcs.
Lock	✓, 2 pcs. keys included.
Fan in enclosure	✓ Fan sits in power supply.

Dimensions, weight and packaging information

Table 14. Dimensions

Dimensions, (WxHxD).	Dimensions with packaging ^a .
370 x 370 x 195 mm	380 x 380 x 200 mm

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

Table 15. Weight

Net weight	Weight with packaging
6.1 kg	6.3 kg

Table 16. Packaging

Packaging	Info
Packaging	Cardboard and impact protection in cardboard.
Quantity in pack	1 pc.
Packaging Type (GS1 T0137)	BX box.

Assembly, installation and eligibility requirements

Table 17. Fitting

Fitting
Wall.

Table 18. Installation

Installation	Yes	No	Other. info
Fixed installation.	✓		-

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

Table 19. Eligibility requirements by country. Applies only to the installation of this product in a fixed network connection

Permis- sion Re- quire- ments for In- stalla- tion	Fixed instal- lation (230 V)	Plug	Other. info
Sweden	✓	x	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	✓	x	Plug may be connected without authorization. (Tukes, SFS 6000)
Den- mark	✓	x	Plug may be connected without authorization. (Safety Board)
Germa- ny	✓	x	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")

Recommended options

Recommended options for specific installation, safety and functional needs.

Table 20. Name, Part Number and E-Number

Name	Item No.	E-number
Relay/Communication Cards ECO Series (CEO-FLX)	A-AL1224CEO01	52 137 85

Operation and maintenance

Table 21. 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.

Operation	Data	Other. info
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 22. Maintenance

Yes	No	Interval	Other. info
	✓		Maintenance-free.

Table 23. Reference table: environmental classes according to EN 50130-5 (referred to in EN 50131-6)

Class	Type	Tempera- ture range
Environmental Class 1	Heated indoors (type of- fice/residence).	+5°C to +40°C
Environmental Class 2	Generally indoors (type warehouses/stairwells, not temperature control- led).	-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

Table 24. Reference table: manufacturer's stated service life and recommended battery replacement

Battery Type (De- sign Life) ^a	Battery re- placement time in nor- mal opera- tion, +20°C.	Replace- ment dur- ing hot opera- tion, +30°C	Replace- ment dur- ing hot opera- tion, +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.

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.milletechnik.se/Manualer/FaQ/Reservdrifttider/

Certifications and approvals

Table 25. Approved according to

Complies with	Directives
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 (EC) 765/2008

Complies with	Directives
EMC	EMC Directive 2014/30/EU
Electric (LVD)	Low Voltage Directive: 2014/35/EU

Environmental data

Table 26. Environmental data

Environmental data	J/N	Information	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	x		
SCIP No 2008/98/EC	✓	Yes, registered under the EU Waste Directive where applicable, (2008/98/EC).	If empty, no SCIP number is needed.
Conflict minerals (EU) 2017/821	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.	-

¹Costs incurred in connection with recycling are not reimbursed.

Environmental data	J/N	Information	Other info.
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.	

^aStandby consumption and power.



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.¹Contact your distributor for more information.

Delivery time, warranty and terms

Table 27. Delivery time, warranty and terms

Delivery time, warranty and terms	Info
Warranty period ^a	The product has a two (2) year warranty against manufacturing defects. In addition to the regular warranty period, an additional three (3) year warranty can be purchased.
Special warranty conditions	Batteries and wear parts are not covered by warranty. See also general terms and conditions.
General Terms and Conditions	ALEM09 with exceptions, see: www.milleteknik.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.
Storage	Temperate environment/frost free.

^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.

Manufacturer and country of origin

Table 28. Manufacturer and country of origin

Manufacturer and origin	Info
Manufacturer ^a	Milleteknik AB
Country of origin	Sweden

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

Contact

Table 29. Contact

Department	Contact
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

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.

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