

PRODUCT SHEET

ECO power supply with battery backup

Figure 1. ECO FLX S



ECO FLX S can be mounted on a wall or in a 19" rack.

Product Identification

Table 1. Product designation, article number and e-number.

Product designation	Article number	E-number (SE)
ECO 24V 5A FLX S	FS01C10124P050	52 136 45

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

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

Table 2. Quick Facts

Quick Facts	
Supply voltage (V)	230V AC, +/- 10%, 47Hz- 63Hz
Voltage out (V)	27.3 V DC, (24 V DC) Also applicable in battery operation.
Current output (A), max load current output.	5A
Batteries ^a	2 x 7,2 Ah 2 x 14 Ah

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

Areas of application

Table 3. Areas of application

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

Electrical data

Table 4. Electrical data

Electrical data	
Supply voltage	230V AC, +/- 10%, 47Hz- 63Hz
Charge current	Max 5 A
Efficiency ^a	86%
Standby consumption	1.70 W
Voltage out	27.3 V DC, (24 V DC) Also applicable in battery operation.
Current (A) ^b	5A

^a At rated load.

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

Table 5. Fuses

Fuses	
Mains fuse	2.5 A
Load fuses	! 5
Battery fuse	16A

Table 6. Printed circuit boards and Internal power consumption

Circuit Boards	Internal power consumption (during battery operation)	Other. info
CEO3 24V, v5 and CEO3 uP	50 mA	

Load outputs

Table 7. Load outputs

Load outputs	
Number of load outputs	! 2 ^a

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

Table 8. Total maximum load and recommended load.

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

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

Alarm and protection

Table 9. Number of relay on which alarm can be given

Number of Relays	Alarm on switching relay? ^a
1	✓ ^b

^a Relay, alternating potential-free contacts.

^b Relay, alternating potential-free contacts.

Table 10. Alarm over communication and on LEDs on motherboards: CEO3

Alarms	Indication ^a .
Delayed power outage alarm or low battery voltage*	✓
Fuse failure*	✓
Disconnected batteries at boot*	✓
Alarm limit control	✓
Undervoltage	✓, Glows red in case of power failure until battery voltage drops below alarm limit
*Sum Alarm	

^a Indication diode on main board and LED on door

Table 11. Alarm and protection

Alarm and protection	Yes	No
Battery charge protection/control-led charging ^a	✓ Batteries are charged with a maximum of 0.5 A. ^b	
Cold Start	✓	
Deep discharge protection, see Battery [2] ^c	✓	
Overload Protection/Surge Protection	✓	
Over-temperature protection	✓	
Short circuit protection	✓	

^a Controlled charging protects and extends battery life.

^b Factory setting. Adjustable in PowerWatch

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

Communication and Indications

Table 12. Communication and Indications

Communication and Indications	Yes	No	Other. info.
Communication		X	Communication with the parent system is not supported.
Indicators/ LEDs	✓		LED displays information and alarms on circuit boards and on the outside of the housing.

Battery

Table 13. Technical data - Batteries

Battery	
Ref. Batteries ^a	2 x 7,2 Ah 2 x 14 Ah
Battery type	Maintenance-free AGM (lead-acid) batteries
Deep discharge protection	Activates when the system voltage drops below about 20 V DC.

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

Enclosure and Mechanics

Table 14. 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	5
Cable grommets	4 pcs
Knockout hole	1 pc. on the back
Lock	✓ 2 keys included
Fan in enclosure	X

Assembly, installation and eligibility requirements

Table 15. Fitting

Fitting	Yes	No
Wall.	✓	

Table 16. Installation

Installation	Yes	No
Fixed installation.	✓	

Dimensions, weight and packaging information

Table 17. Dimensions

Dimensions, (WxHxD).	Dimensions with packaging ^a .
222 x 437 x 145 mm	250 x 490 x 185 mm

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

Table 18. Weight

Net weight	Weight with packaging
5.5 kg	6.1 kg

Table 19. Packaging

Packaging	
Packaging	Cardboard and impact protection in cardboard.
Quantity in pack	1 pc.

Packaging

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

Contact

Table 20. 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

About this information

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

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COMPLIANCE AND REGULATORY COMPLIANCE

Delivery time, warranty and terms

Table 21. Delivery time, warranty and terms

Delivery time, warranty and terms	
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 .	3 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.

Operation and maintenance

Table 22. 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 23. Maintenance

Yes	No	Interval	Other. info
	✓		Maintenance-free.

Certifications and approvals

Table 24. 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 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/EU

Environmental data

Table 25. 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	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/ X/✓	No=Gold, Tungsten, Tantalum, Cobalt. Yes=Tin	Tin in solders in printed circuit boards purchased through a Swedish supplier.

Environmental data	J/N	Informație	Other. info.
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.



Manufacturer and country of origin

Table 26. 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.

APPENDIX

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/

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 27. 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	✓	✗	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")

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

Table 28. 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 of-fice/residence).	+5°C to +40°C

Class	Type	Temperature range
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

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

Table 29. 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.

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