

PRODUCT SHEET

PoE

Figure 1. PoE Switch 4p FLX M



PoE switch with 8 PoE ports.

Product Identification

Table 1. Product designation, part number and email number.

Product designation	Article number	E-number (SE)
PoE Switch 8p FLX M	FM01N10224P01008PM	51 728 97

Technical description

Power supply with backup power to power PoE devices such as surveillance cameras and other PoE powered devices. A plate for keystone modules makes the installation of PoE devices easier. An additional load output to power other 24 V applications.

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

Plate for fastening of keystone modules.

Constant output voltage, 24 V (which is boosted to 48 V), regardless of battery or mains operation, which allows the full battery capacity to be used.

For mounting on a wall or in a 19" rack.

Table 2. Quick Facts

Quick Facts	
Supply voltage (V)	230V AC, +/- 10%, 47Hz- 63Hz
Voltage out (V)	54.6 V DC, (48 V DC) 27.3 V DC, (24 V DC) Also applicable in battery operation.
Batteries ^a	2 x 20 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
IP camera, power supply.	✓	
Networked devices that can be powered by PoE.	✓	

Electrical data

Table 4. Electrical data

Electrical data	
Supply voltage	230V AC, +/- 10%, 47Hz- 63Hz
Charge current	Depending on the power outlet. Max 10A
Efficiency ^a	90%

Electrical data

Standby consumption	3.38 W
Voltage out	54.6 V DC, (48 V DC) 27.3 V DC, (24 V DC) Also applicable in battery operation.
Current (A) ^b	5 A on 24 V load output
Power (W)	30.8W per port

^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	Fuse on supply to PoE switch (8p): T10A Load output fuse: 10 A Fuse on supply to PoE switch (16p): 13.5 A
Battery fuse	30A

Table 6. Printed circuit boards and Internal power consumption

Circuit Boards	Internal power consumption (during battery operation)	Other. info
PoE Switches 8p	56 mA	

Load outputs

Table 7. Load outputs

Load outputs	
Number of loading outputs	PoE switch can drive load. Load output to power other applications

Table 8. POE outputs

POE outputs	
Number of PoE ports (RJ-45)	8
PoE budget	
POE Budget/Max Power Per Port	! 8 30.8 W.
Number of LAN ports	
Network ports/interfaces, RJ-45	100 Mbit/s 1000Mbps
Managed	No Yes

Alarm and protection

Table 9.

Alarms	Indication diode on main board and LED on door.
Disconnected batteries (10 sec)	✓ Disconnected battery at startup, then check every 45 minutes.
Delayed power outage alarm (10 sec)	✓
Sabotage Breakers	✓
Charger failure, overvoltage	✓
Charger failure, undervoltage	✓
Low battery voltage	✓
Fuse failure	✓

Table 10. 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	

Alarm and protection	Yes	No
Deep discharge protection, see Battery [2]^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.

Communication and Indications

Table 11. Communication and Indications

Communication and Indications	Yes	No	Other. info.
Communication		✗	
Indicators/LEDs	✓		LED displays information and alarms on circuit boards and on the outside of the housing.

Battery

Table 12. Technical data - Batteries

Battery	
Ref. Batteries ^a	2 x 20 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 13. 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	✓

Assembly, installation and eligibility requirements

Table 14. Fitting

Fitting	Yes	No
19" rack.	✓	
Wall.	✓	

Table 15. Installation

Installation	Yes	No
Fixed installation.	✓	

Dimensions, weight and packaging information

Table 16. Dimensions

Dimensions, (WxHxD).	Dimensions with packaging ^a
224 x 437 x 212 mm	260 x 480 x 250 mm

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

Table 17. Weight

Net weight	Weight with packaging
8 kg	8.75 kg

Table 18. Packaging

Packaging	
Packaging	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

Contact

Table 19. 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 20. 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	Or as per agreement. Delivery from factory, transportation time is added.

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

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

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.
Ventilation, free distance around the enclosure.	100 mm	Ventilation openings must not be blocked or covered.

^a Specifies 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
✓		Annually	Battery terminal voltage must be measured. Ensure that the average load does not exceed 80% of the rated capacity of the power supply.

Certifications and approvals

Table 23. Approved according to

Complies with	Directives
PoE	IEEE 802.3af, IEEE 802.3at/30.8 W. Note that 802.3at type2 is not supported, as the PoE card does not have a type 2 handshake function.
Emissions	
Immunity	EN61000-6-2:2005, EN61000-4-2, -3, 4, -5, -6, -11 SS-EN 50130-4:2011 Edition 2, EN50131-6

Complies with	Directives
C.E.	CE marking according to Regulation (EC) No 765/2008
RoHS	RoHS Directive 2011/65/EU, including amendment (EU) 2015/863
EMC	EMC Directive 2014/30/EU
Electric (LVD)	Low Voltage Directive 2014/35/EU

Environmental data

Table 24. 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.

Environ-mental da-ta	J/N	Informație	Other. in-fo.
Conflict minerals (EU) 2017/821	X/ X/ X/ X/✓	No=Gold, Tungsten, Tantalum, Cobalt. Yes=Tin	Tin in sol- ders in printed cir- cuit boards purchased through a Swedish supplier.
Contains nanomateri- als: EC 1272/2008	X	The product does not contain nanomaterials.	
Ecodesign 2009/125/E C	Milleteknik's products are intended for profession- al use and are therefore not directly covered by the Ecodesign Regulation (EU 2019/1782). As some components may be covered, we neverthe- less disclose relevant information ^a , where appli- cable, to provide our customers with confidence in their choice.		
Machine Di- rective 2006/42/EC	The product is part of electrical systems, is sub- ject 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, environ- mental factors, mainly ambient temperature, unforeseen load on components such as lightning strikes, external impact, handling er- rors, 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 25. 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 classifica-
tion 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 26. 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")

Miscellaneous

The difference between PoE, PoE+ and PoE++.

Table 27. Max power PoE.

-	PoE	Poe+	PoE++
Compatible ^a .	-	PoE	PoE, PoE+
Official name	IEEE 802.3af	IEEE 802.3at	IEEE 802.3bt

-	PoE	Poe+	PoE++
Maximum power	13 W	25 W	71 W

^aThe power supply follows "up", but not "down". A PoE can never power a PoE+/PoE++ device that requires more than 13 W.

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 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

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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