

NEO BATTERY BACKUP WITH MORE ALARM FUNCTIONS

NEO FLX M Display



NEO FLX M Display is available in 24 V and can be mounted on a wall or in a 19" rack.

Technical specifications

These technical specifications are subject to change without notice.

Product Identification

Product designation, Part Number and E-Number

Product designation	Article number	E-number (SE)
NEO 24V 10A FLX M Display	FM01P10024P100-DSP1	52 136 33

NEO battery backup for security installations

NEO is normally used in facilities where the requirements are higher regarding greater flexibility, more alarm functions, longer backup operating times or when the battery backup needs to handle higher loads. The NEO series offers controlled charging (intelligent charging), which means that when the batteries are fully charged, they will be electronically disconnected for standby mode for up to 20 days or when the batteries have reached 26.7 V (24 V). By discharging the batteries and recharging them continuously (instead of never using them), the system extends the life of the battery by up to 50%. The batteries automatically connect in less than 50 microseconds when needed.

- Battery backup with more alarm functions
- Controlled charging
- Can be supplemented with several optional cards
- Can be used with battery box

NEO with display

NEO with display has an external display for status readings and battery capacity setting.

Flexibility

NEO FLX S can have an extra battery box. NEO FLX M and NEO FLX L with 1-4 extra battery boxes. NEO FLX M and NEO FLX L with battery shelves in 19 "rack *. * The battery boxes and shelves are connected via a 9-pin connector. The battery box has room for up to 2 pcs. 45 Ah batteries per battery box. Battery shelves have room for 2 pcs. 45 Ah batteries (Medium) and up to 2 pcs. 150 Ah batteries (Large) per each battery shelf.

Area of use

NEO supplies power to access systems, alarm systems or other security products in a building that are powered by 24 V DC. The rectifier in the power supply converts 230 V AC down to 24 V DC. Batteries, for example the access system, continue when the power grid goes down. Long life, energy efficient and support is available if something goes wrong, now or in 10 years.

Fixed installation

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

REGULATIONS AND CERTIFICATIONS

Requirements that the product meets

The product meets the following requirements.

EMC:	EMC Directive 2014/30/EU
Electricity:	Low Voltage Directive 2014/35/EU
CE marking:	Regulation (EC) No 765/2008
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 50 130-4:2011 Edition 2, EN50131-6
Machinery Directive	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).
Ecodesign	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 to give our customers confidence in their choice

Denomination	Efficiency (%) ^a	Standby consumption, typical (W):
	89%	5.54 W

^aAt rated load.



EXPECTED OPERATING TIME IN THE EVENT OF A POWER FAILURE (WITH NEW BATTERIES)

System voltage	Number of batteries	Battery type	Unit + battery box *	Load: 2 A	Load: 4 A	Load: 8 A	Load: 10 A	Load: 14 A	Load: 18 A
24 V	2 pcs	20 Ah	1+0	9 h	3.5 h	1.5 h	1 h	30 min.	20 min.
24 V	2 pcs	45 Ah	1+1	21 h	12 h	4 h	3 h	2 h	1.5 h
24 V	4 pcs	45 Ah (90 Ah)	1+2	42 h	20 h	12 h	8 h	5 h	3.5 h
24 V	6 pcs	45 Ah (135 Ah)	1+3	64 h	30 h	15 h	12 h	9 h	6 h

System voltage	Number of batteries	Battery type	Unit + battery box *	Load: 2 A	Load: 4 A	Load: 8 A	Load: 10 A	Load: 14 A	Load: 18 A
24 V	8 pcs	45 Ah (180 Ah)	1+4	82 h	42 h	20 h	16 h	12 h	10 h
* Example: 1 + 2 means that there is 1 battery backup with 2 battery boxes connected. 1 + 0 means that it is a battery backup without a battery box.									

CIRCUIT BOARDS - TECHNICAL DATA

Technical data, motherboard: PRO 3

Info	Explanation
Short name:	PRO 3
Product description	Motherboard in battery backup with advanced functions and communication to parent system.
Own consumption, with relay card	Less than 100 mA. All relays retracted on external alarm card in normal mode.
Switching time from mains voltage to battery operation	When batteries are idle: <5 microseconds. When batteries are in charge cycle: 0 (none). Batteries rest for 20-day cycles, after which a charging cycle picks up and charges the batteries for 72 hours. If there is a power failure when batteries are in the charge cycle, there is no switching time.
Incoming electricity network	230 V AC -240 V AC, 47-63 Hz.
Fuse on mains	See table: Fuses.
Indication	Indicator diode on circuit board / cabinet door

ALARM

Alarm displayed on indicator LED on the front of the cabinet.

- Cell fault in battery or unconnected battery. Disconnected battery at start-up, then check every 45 minutes.
- Charger fault, undervoltage.
- Charger fault, overvoltage.
- Low system voltage, system voltage below 24.0 V in mains operation.
- Low battery voltage, below 24.0 V DC in case of mains failure.
- Power failure alarm.
- Sabotage switch.
- Fuse fault.

Expanding alarm functions are available via communication or with alarm cards.

Fuses

Fuses	Type
10 A	T10A - glass tube fuse
Mains fuse for 24 V units up to 15 A	T2.5AH250V. Ceramic.

Protection

Info	Explanation
Deep discharge protection (Yes / No)	24 V units protection at 20 V +/- 0.5 V.
Surge protection (Yes / No)	Yes - above 27.9V
Overtemperature protection (Yes / No)	Yes - above 35°C
Short circuit protected = (Yes / No)	Yes

POWER SUPPLY

Power supply - Technical Data LRS-150-24

In:	
Info	Explanation
Output voltage	27.3 V
Output current:	0 A - 6.5 A
Output voltage, ripple	200 mVp-p
Overvoltage	28.8 V - 33.6 V
Voltage recharge, ripple / current limitation	Less than 0.6 Vp-p
Efficiency	89%
Current limitation	110% - 140%
Constant voltage	+/- 0.5%
Regulatory accuracy	+ / - 1.0%
Input current (230 V)	1,7 A
Mains voltage frequency	47 Hz- 63 Hz
Mains voltage	230 V AC - 240 V AC
Brand effect	156 W
Temperature range	-30°C - +70°C
Humidity range	20% - 90% RH non-condensed
The power supply is adapted and calibrated with the battery / hardware of the battery backup. Only power and calibrated power supplies may be used. Contact support when changing power supplies. Use of power supplies coming from another source may cause damage not covered by the warranty. Warranty is canceled if power supplies (from a source other than support / designated by support) that are not correctly calibrated are used.	

Power supply - Technical Data RSP-320-24

In:	
NEO 24V 10A FLX M Display	
Info	Explanation
Output voltage	27.3 V
Output current	0 A - 13.4 A
Output voltage, ripple	150 mVp-p
Overvoltage	27.6 V - 32.4 V
Voltage recharge, ripple / current limitation	Less than 1.2 Vp-p
Efficiency	89%
Current limitation	105% - 135%
Constant voltage	+/- 0.5%
Regulatory accuracy	+/- 1.0%
Input current (230 V)	2 A
Mains voltage frequency	47 Hz- 63 Hz
Mains voltage	230 V AC - 240 V AC
Brand effect	321.6 W
Temperature range	-30°C - +70°C
Humidity range	20% - 90% RH non-condensed
The power supply is adapted and calibrated with the battery / hardware of the battery backup. Only power and calibrated power supplies may be used. Contact support when changing power supplies. Use of power supplies coming from another source may cause damage not covered by the warranty. Warranty is canceled if power supplies (from a source other than support / designated by support) that are not correctly calibrated are used.	

Power supply - Technical Data HRP-600-24

In:	
Info	Explanation
Output voltage	27.3 V
Output current	0 A - 27 A
Output voltage, ripple	150 mVp-p
Overvoltage	30 V - 34.8 V
Voltage recharge, ripple / current limitation	Less than 1.2 Vp-p
Efficiency	88%

Info	Explanation
Current limitation	105% - 135%
Constant voltage	+/- 0.5%
Regulatory accuracy	+/- 1.0%
Input current (230 V)	3,6 A
Mains voltage frequency	47 Hz- 63 Hz
Mains voltage	230 V AC - 240 V AC
Brand effect	648 W
Temperature range	-30°C - +70°C
Humidity range	20% - 90% RH non-condensed
The power supply is adapted and calibrated with the battery / hardware of the battery backup. Only power and calibrated power supplies may be used. Contact support when changing power supplies. Use of power supplies coming from another source may cause damage not covered by the warranty. Warranty is canceled if power supplies (from a source other than support / designated by support) that are not correctly calibrated are used.	

TECHNICAL DATA ENCLOSURES

Enclosures - Technical Data FLX M

Info	Explanation
Name	FLX M
Enclosure class	IP 32
Measure	Height: 224 mm, width 438 mm, depth 212 mm
Height units	5 HE
Mounting	Wall or 19 "rack
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	Black
Cable entries, number	4
Batteries that fit	2 pieces 12 V, 20 Ah.
Fan	Yes

LINK TO THE LATEST INFORMATION

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

[NEO](#)

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) occur 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.

Country of manufacture

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

Designed and produced by: Milleteknik AB

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BATTERIES - RECOMMENDED, NOT INCLUDED

Batteries are not included they are sold separately

Batteries are sold separately.

14 Ah, 12 V AGM battery

Fits in	Number of batteries	
Battery type	V	Ah
Maintenance-free AGM, lead-acid battery.	12 V	14 Ah

10+ Design life * battery

Article number	E-number	Article name	Terminal	Measure. Height width depth	Weight per piece	Make
MT113-12V14-01	5230537	UPLUS 12V 14Ah 10+ Design Life battery	Flat pin 6.3 mm	151x98x101 mm	4.2 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.

20 Ah, 12 V AGM battery

Fits in	Number of batteries	
NEO 24V 10A FLX M	2	
Battery type	V	Ah
Maintenance-free AGM, lead-acid battery.	12 V	20 Ah

10+ Design life * battery

Article number	E-number	Article name	Terminal	Measure. Height width depth	Weight per piece	Make
MT113-12V20-01	5230538	UPLUS 12V 20Ah 10+ Design Life battery	M5 Bult	182x77x168 mm	6.0 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.

Reserve operating times for different alarm classes - overview

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



IMPORTANT

This is a guide and all times are approximate and may differ from actual times. Load, temperature and other factors come into play, which is why exact time can not be provided.

Applies to new batteries.

Amperage and batteries vary with configuration, check if the configuration can handle batteries and amperage.

Backup operating times 24 V units - without battery box

Medium current	7.2 Ah	14 Ah	28 Ah	45 Ah
Loading	Backup operating time (approx.), Minutes			
0.5 A	450	820	1650	2350
1 A	260	485	970	1460
2 A	150	280	560	920
4 A	90	165	335	550
6 A	67	125	245	405
8 A	57	105	210	350
10 A	44	80	160	270
12 A	38	70	140	235
14 A	33	60	120	200
16 A	28	50	100	170
18 A	25	45	89	150
20 A	23	42	84	142

Backup operating times 24 V units - with battery box, 28 Ah - 70 Ah

Medium current	28 Ah	42 Ah	65 Ah	70 Ah
-	4 batteries (14 Ah)	6 batteries (14 Ah)	4 batteries (20Ah + 45 Ah)	10 batteries (7 Ah)
Loading	Backup operating time (approx.), Minutes			
0.5 A	1650	2090	5574	3440
1 A	970	865	3252	2118
2 A	560	815	1770	1329
4 A	335	490	930	864
6 A	245	360	600	605
8 A	210	310	426	544
10 A	160	240	342	414
12 A	140	210	270	363
14 A	120	180	234	311
16 A	100	150	204	286
18 A	90	130	150	254
20 A	84	126	138	241

Backup operating times 24 V units - with battery box, 90 Ah - 155 Ah

Medium current	90 Ah	110 Ah	135 Ah	155 Ah
-	4 batteries (45 Ah)	6 batteries (20 Ah + 45 Ah)	6 batteries (45 Ah)	8 batteries (20 Ah + 45 Ah)

Medium current	90 Ah	110 Ah	135 Ah	155 Ah
Loading	Backup operating time (approx.), Minutes			
0.5 A	4705	5796	7056	8215
1 A	2928	3582	4392	5070
2 A	1836	2247	2754	3230
4 A	1183	1438	1762	2018
6 A	788	959	1175	1345
8 A	748	861	1048	1150
10 A	570	689	839	920
12 A	499	603	699	765
14 A	427	516	629	655
16 A	404	499	592	590
18 A	359	444	526	520
20 A	340	420	498	495

Backup operating times 24 V units - with battery box, 180 Ah - 225 Ah

Medium current	180 Ah	200 Ah	225 Ah
-	8 batteries (45 Ah)	10 batteries (20 Ah + 45 Ah)	10 batteries (45 Ah)
Loading	Backup operating time (approx.), Minutes		
0.5 A	9408	12972	11760
1 A	5856	7872	7320
2 A	3672	4548	4590
4 A	2365	2670	2945
6 A	1577	1780	1960
8 A	1500	1558	1800
10 A	1140	1246	1410
12 A	950	1038	1200
14 A	855	890	1055
16 A	810	902	995
18 A	715	802	885
20 A	680	722	840

Subject to typos.