

TECHNICAL SPECIFICATIONS: EN54-4 CERTIFIED / SBF110:8 APPROVED BATTERY BACKUP

EN54 1U and EN 54 2U



The battery backup is mounted in a 19" rack.

Name, article number, e-number and certificate number

Name	Item number	Email number	Product name on certificate	Certified according to	SBSC Certificate number	Certification scheme:
EN54 24V 15A 1U	1U01R10024P150-EN54	52 135 55	RACK 27 150-1HE,	SBF 110:8 The product also meets SBF 110:7	No. 18-244	Scheme 1a (ISO/IEC 17067:2013)2017-12-18
EN54 24V 25A 2U	2U01R10024P250-EN54	52 135 56	RACK 27 250-2HE	SBF 110:8 The product also meets SBF 110:7	No. 18-244	Scheme 1a (ISO/IEC 17067:2013)2017-12-18
EN54 48V 7A 1U	1U01R10048P070-EN54	52 135 57	RACK 54 70-1HE	SBF 110:8 The product also meets SBF 110:7	No. 18-244	Scheme 1a (ISO/IEC 17067:2013)2017-12-18
EN54 48V 13A 2U	2U01R10048P130-EN54	52 135 58	RACK 54 130-2HE	SBF 110:8 The product also meets SBF 110:7	No. 18-244	Scheme 1a (ISO/IEC 17067:2013)2017-12-18

About EN54 1U and EN54 2U

EN54 powers fire alarms with 24 V DC – 48 V DC. The rectifier in the power supply converts 230 V DC down to 48 V or 24 V and supplies power to all important parts of the fire alarm system. Batteries continue to power the fire alarm system when the power goes down. EN54 power supply is certified to be used in security facilities that must meet EN54-4 or be approved for SBF 110:8.

Long life, energy efficient and support is available if something goes wrong, now or in 10 years.

Area of use

EN54 is used for fire alarm systems in public environments such as schools, offices and commercial properties.



Fixed installation

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

REGULATIONS AND CERTIFICATIONS

Standards that product (s) meet and are approved for

EN54

EN50131-6:2017.

EN 54-4:1997, EN 54-4:1997/AC:1999, EN 54-4:1997/A1:2002 and EN 54-4:1997/A2:2006.
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SBF

SBF 110:8

SSF

SSF1014 Alarm class 1-4 (burglar alarm).
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SSF1014, Issue 5.

Certificate and certificate number

Certificate number, SBSC

No. 18-244

Requirements that the product meets

EMC:	EMC Directive 2014 / 30EU
Electricity:	Low voltage directive: 2014/35 / EU
CE:	CE directive according to: 765/2008
Emission:	EN61000-6-: 2001 EN55022: 1998: -A1: 2000, A2: 2003 Klass B, EN61000-3-2: 2001
Immunity:	SS-EN 50 130-4:2011 Edition 2, EN50131-6



BATTERY COMBINATIONS 1U AND 2U

EN54 24V 15A 1U, EN54 24V 25A 2U

Ah	Number of battery used in	combination with EN54 24V 15A 1U	combination with EN54 24V 25A 2U
28 Ah	2 pcs. 28 Ah	Yes	No
45 Ah	2 pcs. 45 Ah	Yes	Yes
55 Ah	2 pcs. 55 Ah F (front fed)	Yes	Yes
75 Ah	2 pcs. 75 Ah	Yes	Yes
90 Ah	4 pcs. 45 Ah	Yes	Yes
100 Ah	2 pcs. 100 Ah / 2 pcs 100 Ah F (front fed)	Yes	Yes
110 Ah	2 pcs. 55 Ah F (front fed)	Yes	Yes
125 Ah	2 pcs. 125 F (front fed)	Yes	Yes
135 Ah	6 pcs. 45 Ah	Yes	Yes
150 Ah	2 pcs. 150 F (front fed) or 4 pcs. 75 Ah	Yes	Yes
180 Ah	8 pcs. 45 Ah	Yes	Yes
200 Ah	2 pcs. 100 Ah or 2 pcs. 100 Ah F (front fed)	Yes	Yes
240 Ah	4 pcs. 120 Ah	No	Yes
250 Ah	4 pcs. 125 F (front fed)	No	Yes

Ah	Number of battery used in	combination with EN54 24V 15A 1U	combination with EN54 24V 25A 2U
300Ah	4 pcs. 150 F (front fed) or 6 pcs. 100 F (front fed)	No	Yes

EN54 48V 7A 1U, EN54 48V 13A 2U

Ah	Number of battery used in	combination with EN54 48V 7A 1U	combination with EN54 48V 13A 2U
20 Ah	4 pcs. 20 Ah	Yes	Yes
28 Ah	4 pcs. 28 Ah	Yes	Yes
45 Ah	4 pcs. 45 Ah	Yes	Yes
55 Ah	4 pcs. 55 Ah F (front fed)	Yes	Yes
75 Ah	4 pcs. 75 Ah	Yes	Yes
90 Ah	4 pcs. 45 Ah	Yes	Yes
100 Ah	4 pcs. 100 Ah F (front fed)	Yes	Yes
110 Ah	8 pcs. 55 Ah F (front fed)	No	Yes
120 Ah	4 pcs. 120 Ah	No	Yes
125 Ah	4 pcs. 125 Ah F (front fed)	No	Yes
150 Ah	4 pcs. 150 Ah F (front fed)	No	Yes
200 Ah	8 pcs. 100 Ah F (front fed)	No	Yes

RESERVE OPERATING TIMES, POWER OUTLET AND LOAD OUTPUT CURRENT

Cargo current

EN54 24V 15A 1U

Battery size	Maximum Power outlet i network operation (Imax. A)
28 Ah	12 A
45 Ah	11 A
55 Ah	10.3 A
75 Ah	9.1 A
90 Ah	8.2 A
100 Ah	7.5 A
110 Ah	6.9 A
120 Ah	6.3 A
125 Ah	6 A
135 Ah	5.3 A
150 Ah	4.3 A
180 Ah	2.5 A
200 Ah	1.3 A
Maximum power consumption battery operation: 14 A	
Maximum current consumption battery operation, (same as Imax.b): 15 A	

EN54 24V 25A 2U

Battery size	Maximum Power outlet i network operation (Imax. A)
45 Ah	24 A
55 Ah	23.3 A
75 Ah	22.1 A
90 Ah	21.2 A
100 Ah	20.5 A

Battery size	Maximum Power outlet i network operation (I _{max} . A)
110 Ah	19.9 A
120 Ah	19.3 A
125 Ah	19 a
135 Ah	18.3 A
150 Ah	17.4 A
180 Ah	15.5 A
200 Ah	14.3 A
240 Ah	11.8 A
250 Ah	11.2 A
300 Ah	8 A
Maximum power consumption battery operation: 14 A	
Maximum current consumption battery operation, (same as I _{max} .b): 15 A	

EN54 48V 7A 1U

Battery size	Maximum Power outlet i network operation (I _{max} . A)
14 Ah	6 A
20 Ah	5.6 A
90 Ah	5.1 A
100 Ah	4.1 A
120/125 Ah	3.4 A
135 Ah	2.2 A
150 Ah	1.3 A
180 Ah	0.65 A
Maximum current consumption battery operation: 14 A	
Maximum current consumption battery operation, (same as I _{max} .b): 15 A	

EN54 48V 13A 2U

Battery size	Maximum Power outlet i network operation (I _{max} . A)
20 Ah	11.6 A
28 Ah	11.1 A
45 Ah	10.1 A
55 Ah	9.4 A
75 Ah	8.2 A
90 Ah	7.3 A
100 Ah	6.6 A
110 Ah	6 A
120 Ah	5.4 A
125 Ah	5.1 A
150 Ah	3.5 A
200 Ah	0.4 A
Maximum power consumption battery operation: 14 A	
Maximum current consumption battery operation, (same as I _{max} .b): 15 A	

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
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.

INTERNAL RESISTANCE 1U AND 2U

24 V two pairs of power resistors each parallel 3.3 Ω

48 V two pairs of power resistors each parallel 15 Ω

CIRCUIT BOARDS - TECHNICAL DATA

Technical data - 1HE (motherboard)

Info	Explanation
Article title	1HE
Description	Circuit board for control, distribution, status and alarm from the device.
Status indication	LED, display and communication output (RS-485).
Communication protocol	RS-485 Milleprotokollet - Optional
Error output	Potential-free relay switches rated 1 A @ 30 V DC (all fault outputs).
Self consumption, (in battery operation)	24 V units: 270 mA. 48 V units: 200 mA
Switching time	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 the batteries are in the charging cycle, there is no switching time.
Deep discharge	Deep discharge protection is activated: 1U / 24 V and 2U / 24 V systems when the power supply voltage is below 19 V DC. (1 U / 48 V and 2 U / 48 V systems when the power supply voltage is below 38 V DC.)
Tension, ripple	less than 210 mVp-p in normal operation. (Max 2 V in ripple voltage when recharging batteries, when the power supply goes within the current limit).

Alarm from alternating relay

Name	Alarm
Power Outage / Mains Alarm	NO / CO / NC
Fault in power supply and Fuse Error / PSU and Fuse Error	NO / CO / NC
Battery Error, Aged Battery	NO / CO / NC



Alarm displayed on Alarm (LED)

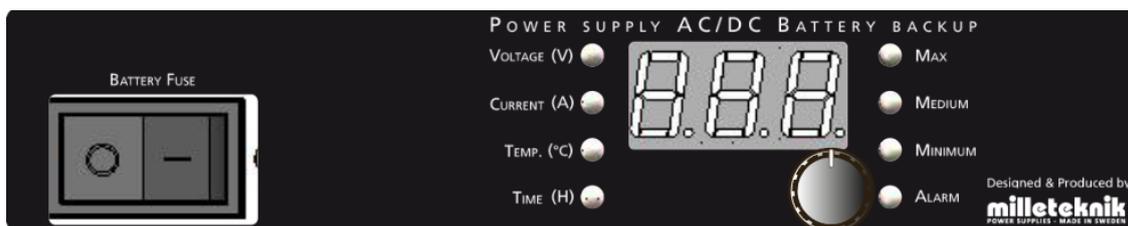
LED status (1)	Explanation	Comment
Off	Normal operation	-
1 blink	Network outages	-

LED status (1)	Explanation	Comment
2 flashes	Delayed network failure	10 second delay.
3 flashes	Charger error	If the batteries have not reached the desired voltage (26.7V) after completing the charging cycle. If the power supply drops below the limit value (26.5V) during the current dormant phase for the batteries. If the voltage from the power supply drops during the connection test for the batteries that occurs every 10 seconds. At low voltage in the power supply (26.7V), the batteries are disconnected every 10 minutes, if low voltage in the power supply remains an alarm is given. If the mains voltage is below system voltage (24V) during mains operation, an alarm is given.
4 flashes	Surge power supply	Voltage above 27.9 V DC (24 V), / 55.8 V DC (48 V).
5 blink	Battery fault	Aged batteries, failed weekly test. Cell test, the internal resistance of the battery has risen above the limit value. Failed connection test. Batteries are not connected or battery voltage below 16 V.
6 flashes	Low battery voltage	Low battery voltage in battery operation.
7 flashes	Summarmarm	Temperature alarm, the temperature is below or above the limit value. Fuse failure, load or battery fuse has blown. Fuse fault from external card with load outputs. Ground fault (D-Sub). Signal error (D-Sub). The temperature sensor is incorrect or missing. Fan fault.
8 blink	System error	The system is not calibrated.

Cargo fuses

	EN54 24V 15A 1U	EN54 24V 25A 2U	EN54 48V 7A 1U	EN54 48V 13A 2U
Load securing 1 (sits furthest towards the edge)	10 A	20 A	10 A	10 A
Load securing 2	10 A	10 A	20 A	20 A
Load securing is installed at the factory and can not be retrofitted.				

WHAT IS SHOWN ON THE DISPLAY - 1HE



By default, the power supply has a front display for status information. The multi-selector dial allows you to read the value on the display. By turning the knob and clicking, the status to be read is selected.

LED that lights up	Display shows	Explanation
Voltage / Voltage (V)	Shows current voltage	-
Voltage / Voltage (V) + Max	Displays the maximum value for voltage	
Voltage / Voltage (V) + Medium	Displays average voltage	
Voltage / Voltage (V) + Minimum	Displays min value for voltage	
Current (A) / Current (A)	Displays current	
Current (A) / Current (A) + Max	Displays the maximum value for current	
Current (A) / Current (A) + Medium	Displays average value for current	
Current (A) / Current (A) - Minimum	Displays min-value for current	
Temp (° C)	Displays the current temperature in the system	Temperature, shows the line temperature sensor is not connected
Temp (° C) + Max	Displays maximum value for temperature	Displays value from internal or external temperature sensor.
Temp (° C) - Medium	Displays average temperature	Displays value from internal or external temperature sensor.
Temp (° C) - Minimum	Displays min-value for temperature	Displays value from internal or external temperature sensor.
Time (H)	Displays current operating time in hours	
Time (H) + Min	Shows the shortest measured operating time	

POWER SUPPLY

Power supply - Technical Data HRP-300-24

In:	
EN54 24V 15A 1U	
Info	Explanation
Output voltage	27.3 V
Output current	0 A - 14 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	87%
Current limitation	105% - 135%
Constant voltage	+/- 0.5%
Regulatory accuracy	+/- 1.0%
Input current (230 V)	1,8 A
Mains voltage frequency	47 Hz- 63 Hz
Mains voltage	230 V AC - 240 V AC
Brand effect	336 W
Temperature range	-40 ° C - + 70 ° C
Humidity range	20% - 90% RH non-condensed
<p>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.</p>	

Power supply - Technical Data HRP-600-24

In:	
EN54 24V 25A 2U	
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%
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
<p>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.</p>	

Power supply - Technical Data HRP-300-24

In:	
EN54 24V 7A 1U	
Info	Explanation
Output voltage	27.3 V
Output current	0 A - 14 A
Output voltage, ripple	150 mVp-p
Overvoltage	30 V - 34.8 V

Info	Explanation
Voltage recharge, ripple / current limitation	Less than 1.2 Vp-p
Efficiency	87%
Current limitation	105% - 135%
Constant voltage	+/- 0.5%
Regulatory accuracy	+/- 1.0%
Input current (230 V)	1,8 A
Mains voltage frequency	47 Hz- 63 Hz
Mains voltage	230 V AC - 240 V AC
Brand effect	336 W
Temperature range	-40 ° 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:	
EN54 48V 13A 2U	

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%
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

Technical data 1U

Info	Explanation
Name	1U
Enclosure class	IP 20
Measure	Height: 44 mm, width: 244 mm, depth: 280 mm.
Height units	1
Mounting	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 metal
Color	Black
Cable glands, number	8

Technical data 2U

Info	Explanation
Name	1U

Info	Explanation
Enclosure class	IP 20
Measure	Height: 88 mm, width: 244 mm, depth: 280 mm.
Height units	2
Mounting	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 metal
Color	Black
Cable glands, number	8

LINK TO THE LATEST INFORMATION

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

EN54

All information is published with the reservation of possible errors.

WARRANTY, SUPPORT, COUNTRY OF MANUFACTURE AND COUNTRY OF ORIGIN

Warranty 5 years

The product has a five-year warranty, from the date of purchase (unless otherwise agreed). Free support during the warranty period is reached at support@milleteknik.se or telephone, +46 31-34 00 230. Compensation for travel and or working hours in connection with the location of faults, installation of 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 may be added (at Milleteknik's discretion) after the warranty period has expired.

Manufacturer support

Manufacturers provide support for the life of the product, however, for a maximum of 10 years after the date of purchase. Switching to an equivalent product may occur if the manufacturer deems that repair is not possible. Support costs will be added after the warranty period has expired.

Support

Do you need help with installation or connections? Our support phone is available: Monday-Thursday 08: 00-16: 00 and Fridays 08: 00-15: 00. Telephone support is closed between 11: 30-13: 15.

You can also send e-mail, we respond, on weekdays, usually in 24 hours.

Phone: +46 31-340 02 30

SPARE PARTS

Support handles questions about spare parts, see contact information above.

QUESTIONS ABOUT PRODUCT PERFORMANCE?

Contact sales: 46 31-340 02 30, e-mail: sales@milleteknik.se

Contact us

Milleteknik AB

Ögärdesvägen 8 B

S-433 30 Partille

Sweden

+46 31-34 00 230

www.milleteknik.se

Country of manufacture

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

Designed and produced by: Milleteknik AB

Designed and produced by Milleteknik AB

BATTERIES - RECOMMENDED, NOT INCLUDED

Batteries are not included they are sold separately

Batteries are sold separately.

Certified with battery type

The device is certified with a UPLUS battery that must be used to maintain the certificate.

7.2 Ah, 12 V AGM battery

Fits in	Number of batteries	
Battery type	V	Ah
Maintenance-free AGM, lead-acid battery.	12 V	7.2 Ah

10+ Design life * battery

Article number	E-number	Article name	Terminal	Measure. Height width depth	Weight per piece	Make
MT113-12V07-01	5230536	UPLUS 12V 7.2Ah 10+ Design Life battery	Flat pin 6.3 mm	151 x 65 x 100 mm.	2.4 kg	UPLUS

* Design Life is the durability this year for unused battery. Environmental factors such as heat and load affect service life. Batteries that have a durability (+10 Design lLife) of 10+ years usually need to be replaced after 4-5 years.

20 Ah, 12 V AGM battery

Fits in	Number of batteries	
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 durability this year for unused battery. Environmental factors such as heat and load affect service life. Batteries that have a durability (+10 Design lLife) of 10+ years usually need to be replaced after 4-5 years.

28 Ah, 12 V AGM battery

Battery type	V	Ah
Maintenance-free AGM, lead-acid battery.	12 V	28 Ah

10+ Design life * battery

Article number	E-number	Article name	Terminal	Measure. Height width depth	Weight per piece	Make
MT113-12V28-01	5230545	UPLUS 12V 28Ah 10+ Design Life battery	M5 Bult	165x125x175 mm	9.5 kg	UPLUS

* Design Life is the durability this year for unused battery. Environmental factors such as heat and load affect service life. Batteries that have a durability (+10 Design ILife) of 10+ years usually need to be replaced after 4-5 years.

45 Ah, 12 V AGM battery

Fits in	Number of batteries	
Battery type	V	Ah
Maintenance-free AGM, lead-acid battery.	12 V	45 Ah

10+ Design life * battery

Article number	E-number	Article name	Terminal	Measure. Height width depth	Weight per piece	Make
MT113-12V45-01	5230546	UPLUS 12V 45Ah 10+ Design Life battery	M5 Bult	197x165x170 mm	14.5 kg	UPLUS

* Design Life is the durability this year for unused battery. Environmental factors such as heat and load affect service life. Batteries that have a durability (+10 Design ILife) of 10+ years usually need to be replaced after 4-5 years.

75 Ah, 12 V AGM battery

Battery type	V	Ah
Maintenance-free AGM, lead-acid battery.	12 V	75 Ah

10+ Design life * battery

Article number	E-number	Article name	Terminal	Measure. Height width depth	Weight per piece	Make
MT113-12V75-01 ***	5230547	UPLUS 12V 75Ah 10+ Design Life battery	M6 Bult	295x168x214 mm	21 kg	UPLUS

* Design Life is the durability this year for unused battery. Environmental factors such as heat and load affect service life. Batteries that have a durability (+10 Design ILife) of 10+ years usually need to be replaced after 4-5 years.

150 Ah, 12 V AGM battery

Battery type	V	Ah
Maintenance-free AGM, lead-acid battery.	12 V	150 Ah

10+ Design life * battery

Article number	E-number	Article name	Terminal	Measure. Height width depth	Weight per piece	Make
MT113-12V150-01 ***	5230561	UPLUS 12V 150Ah 10+ Design Life battery	M8 Bult	485x170x240 mm	43.5 kg	UPLUS

* Design Life is the durability this year for unused battery. Environmental factors such as heat and load affect service life. Batteries that have a durability (+10 Design ILife) of 10+ years usually need to be replaced after 4-5 years.

55 Ah, 12 V AGM battery

Battery type	V	Ah
Maintenance-free AGM, lead-acid battery.	12 V	55 Ah

12+ Design life * battery

Article number	E-number	Article name	Terminal	Measure. Height width depth	Weight per piece	Make
MT114-12V55-FT ***	5230562	UPLUS 12V 55Ah 12+ Design Life battery	M6 Bult	277x106x222 mm	18 kg	UPLUS

** Design Life is the durability this year for unused battery. Environmental factors such as heat and load affect service life. Batteries that have a durability (+12 Design ILife) of 12+ years usually need to be replaced after 5-6 years.

100 Ah, 12 V AGM battery

Battery type	V	Ah
Maintenance-free AGM, lead-acid battery.	12 V	100 Ah

12+ Design life * battery

Article number	E-number	Article name	Terminal	Measure. Height width depth	Weight per piece	Make
MT114-12V100-FT ***	5230563	UPLUS 12V 100Ah 12+ Design Life battery	M6 Bult	285x110x394 mm	35.6 kg	UPLUS

** Design Life is the durability this year for unused battery. Environmental factors such as heat and load affect service life. Batteries that have a durability (+12 Design lLife) of 12+ years usually need to be replaced after 5-6 years.

MT114-12V125-FT *

Battery type	V	Ah
Maintenance-free AGM, lead-acid battery.	12 V	125 Ah

12+ Design life * battery

Article number	E-number	Article name	Terminal	Measure. Height width depth	Weight per piece	Make
MT114-12V125-FT ***	5230564	UPLUS 12V 125Ah 12+ Design Life battery	M6 Bult	287x110x551 mm	40.5 kg	UPLUS

** Design Life is the durability this year for unused battery. Environmental factors such as heat and load affect service life. Batteries that have a durability (+12 Design lLife) of 12+ years usually need to be replaced after 5-6 years.

150 Ah, 12 V AGM battery

Battery type	V	Ah
Maintenance-free AGM, lead-acid battery.	12 V	150 Ah

12+ Design life * battery

Article number	E-number	Article name	Terminal	Measure. Height width depth	Weight per piece	Make
MT114-12V150-FT ***	5230565	UPLUS 12V 150Ah 12+ Design Life battery	M6 Bult	287x110x551 mm	46.0 kg	UPLUS

** Design Life is the durability this year for unused battery. Environmental factors such as heat and load affect service life. Batteries that have a durability (+12 Design lLife) of 12+ 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 - 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)
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

Subject to typos.