BT-5 Medium

en

Battery backup

350-132
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About

The ECO series are reliable and smaller battery backups for use with access control systems, locking systems and other loads. The battery backups have controlled charging *.

BT-5 Medium is a reliable and smaller battery backup for use with access control systems, locking systems and other loads. The battery backups have controlled charging *.

* Controlled charging prevents batteries from being overcharged, which significantly extends their service life.

NOTICE

This unit should be installed on a wall or in a 19" rack, indoors.

The temperature must be 15 - 30 ° C.

Mains voltage must be disconnected during installation.

Only authorized persons should install and maintain the unit.

Name, article number and e-number

Table 1. Name, article number and email number.

Name	Article number	E-number (SV)
BT-5 Medium	28160113	52 574 60

Revisions and the edition of this document

The current and most recently published edition of this document is available at www.rco.se.

The validity of this document can not be guaranteed, as new editions are published without prior notice.

User manual in original language: Swedish.

Instructions for use, technical data and translations thereof may contain errors. It is always the responsibility of the installer to install the product in a safe manner.

Component overviews

Component overview

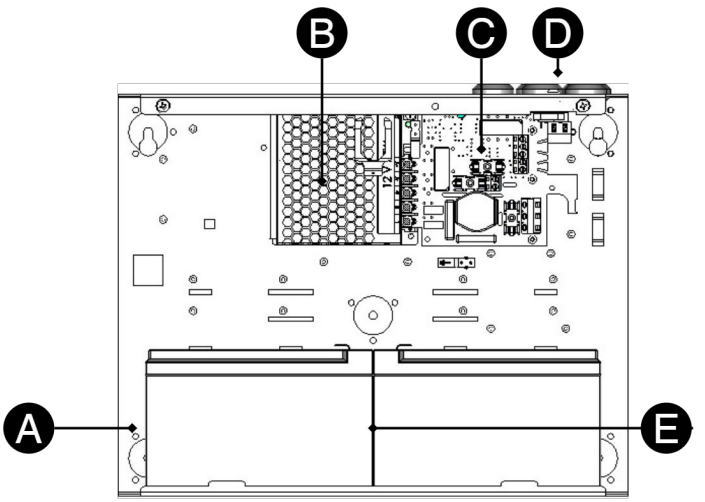


Table 2. Component overview

Number	Explanation
A	Cabinet in powder-coated sheet metal.
B	The power supply, location and type vary with configuration.
C	Motherboard.
D	Cable entries.
E	Space for batteries.

Enclosures

Mounting

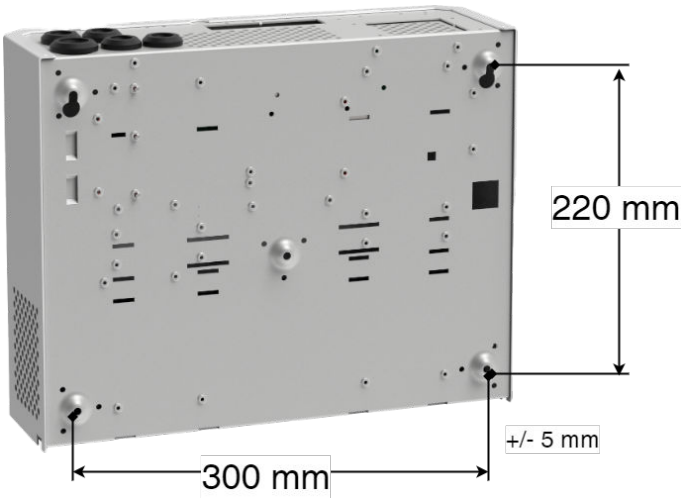
Use the appropriate screw for mounting on the wall, Screw for mounting on the wall is not included.

Wall mounting

Use four screws suitable for the wall to set up the cabinet.

The distance between the screw head and the wall should be 1.5–2 mm.

Preferably leave a 100 mm air gap around the unit.

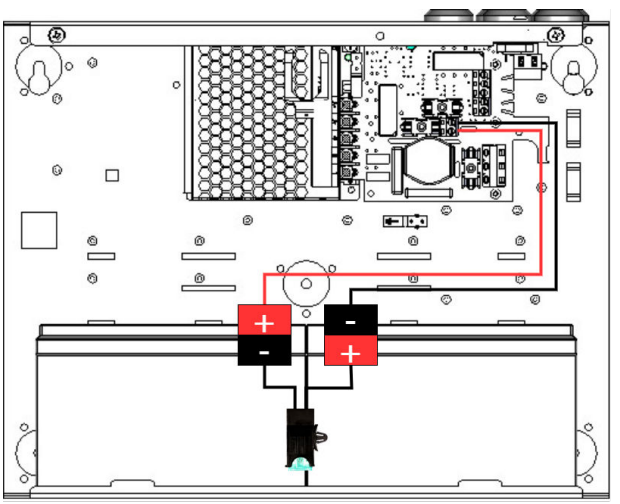


Batteries - placement and connection

Connection of batteries, 24V

Mains voltage should be disconnected when connecting batteries

1. Slide batteries from the side with the battery terminals toward the center. Only use new batteries during installation and battery replacement.
2. Connect fuses on batteries. Connect red cable to + (plus) and black cable to - (minus)
3. Connect cables from battery backup to batteries. Connect red cable to + (plus) and black cable to - (minus)



The picture shows how cables should be connected.

Figure 1. Slide the battery from the side with the battery terminals toward the center.

CEO3 v5 Up

Motherboard description

Connect in this order

To minimize the risk of errors that may occur in connection with a short circuit, connections to the mother-board must be made in this order.

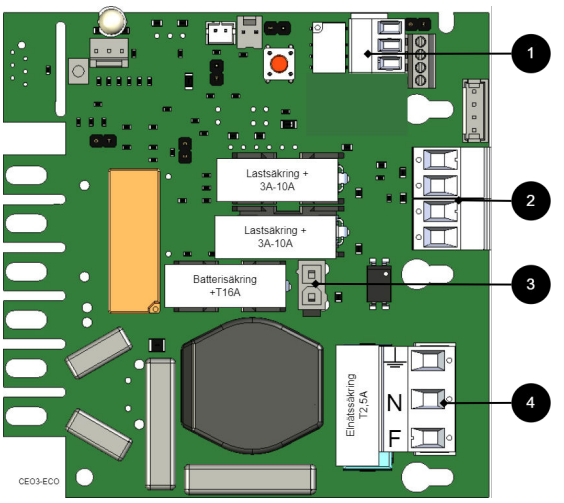


Table 3. Connect in this order

Nr	Explanation
1	Connect alarm.
2	Connect load.
3	Connect batteries
4	Connect mains.

Connect alarm

Connect alarm on terminal P3.

Table 4. Connect alarm P3

P3: 4-6	Explanation
Sum-alarm	
P3: 4	NC
P3: 5	Com
P3: 6	NO

Connect load

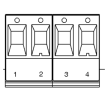


Table 5. Load connections

Circuit board number	Explanation
P2: 1	Connection for load 1 +
P2: 2	Connection for load 1 -
P2: 3	Connection for load 2 +.
P2: 4	Connection for load 2 -.

MAX CURRENT
The maximum current must not be exceeded. Max current is indicated on nameplate on the device.

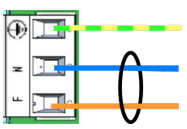
DANGER
Mains voltage must be disconnected when working with stripped cables. It is the installer's responsibility to ensure that the correct skills are available for connecting 230 V to the unit. Maximum cable area is 4 mm^2

Connect mains

Pull wiring through the cable entry on the cabinet.

If possible, secure the mains cable with cable ties where possible.

IMPORTANT
[sv] Elnätskablage skall hållas åtskilt annat kablage för att undvika EMC-störningar.



Connect the mains cable to the terminal before it is put back on the motherboard. Secure F and N with cable ties for electrical safety.

Figure 2. Connect the mains to the motherboard

Table 6. Electrical network connections

Letter	Explanation
F	Phase
N	Neutral

Letter	Explanation
PE	Protective earth

ELECTRICAL MAINS CONNECTION 230 V AC ON CIRCUIT BOARD
Check that the marking on the circuit board matches the cable arrangement on the terminal block.

Control alarm limit

Alarm for low battery voltage in battery operation can be controlled.

By jumpering JU2, the limit for when the unit should give an alarm can be lowered.

Alarms are given when the battery voltage in battery drops below the limit.

Table 7. Low battery voltage alarm limit

Low battery voltage alarm limit	JU2 with jumper[a.]	JU2 without jumper

[a.] The unit is delivered with jumper on JU2

Fuses

Table 8. Fuses.

Unit	Fuse	Type	Explanation
All units	F1	T2,5A	Mains fuse
BT-5 Medium.	F2, F6	T5A	Load fuse +
All units	F7	T16A	Battery fuse

WARNING FOR REPLACING FUSES (CURRENT STRENGTH, A)
There is a risk of damage if the fuse is changed to a larger one than what the unit is delivered with. The function of the fuse is to protect the connected load and cables against damage and fire. It is not possible to change the fuse to a larger one to increase the power output.

Commissioning - how to start the unit

Table 9. Commissioning - the scheme

Step	Explanation
1	Connect batteries.
2	Connect motherboard cables to battery terminals.

Step	Explanation
3	Connect fuse holder with fuse between batteries.
4	Connect load, alarm and other connections.
5	Connect mains. Screw the mains cable into the terminal and attach the terminal to the motherboard.
6	Switch on mains voltage.

Connect in this order

To minimize the risk of errors that may occur in connection with a short circuit, connections to the motherboard must be made in this order.

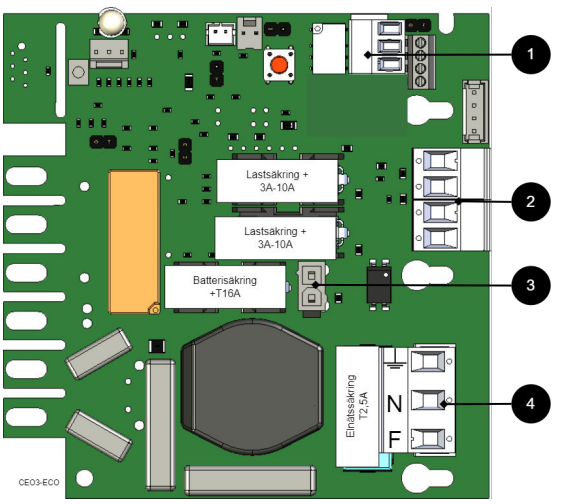


Table 10. Connect in this order

Nr	Explanation
1	Connect alarm.
2	Connect load.
3	Connect batteries
4	Connect mains.

The unit works normally when the indicator LED on the outside of the cabinet door lights up with a solid green light. See front panel for other status indications.

It may take up to 72 hours before the batteries are fully charged.

Alarm displayed on cabinet door

In normal mode, the indicator LED shows a solid green light.

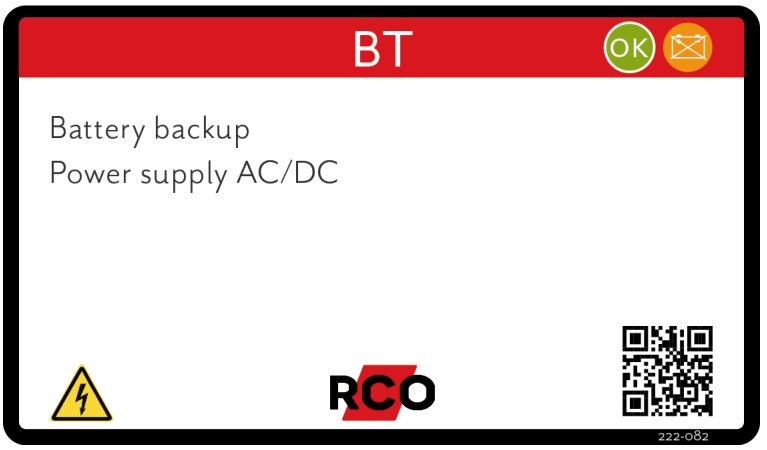


Table 11. Alarm displayed on cabinet door / indicator diode.

The display LED shows	Explanation
Solid green light	Normal operation.
Solid red light	Undervoltage, LED is green in the event of a power failure until the battery voltage drops below the alarm limit.

When operating system: If the indicator LED is off, deep discharge protection has come into force.

ECO product sheet

Product sheet / technical data

BT-5 MEDIUM The unit must be wall-mounted.

Figure 3. BT-5 MEDIUM

Technical specifications

These technical specifications are subject to change without notice.

Name, article number and e-number

Table 12. Name, article number and email number.

Name	Article number	E-number (SV)
BT-5 Medium	28160113	52 574 60

About

The ECO series are reliable and smaller battery backups for use with access control systems, locking systems and other loads. The battery backups have controlled charging *.

BT-5 Medium is a reliable and smaller battery backup for use with access control systems, locking systems and other loads. The battery backups have controlled charging *.

* Controlled charging prevents batteries from being overcharged, which significantly extends their service life.

- For AGM batteries.
- Can be tested with only batteries connected.
- Has controlled charging for better operating economy.

Areas of use

Most used in:

Alarm

The device alarms for:

Undervoltage/low battery voltage.

Fixed installation

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

Test before installation of 230 V

"Cold start" means that the battery backup can be commissioned with only the batteries connected without the battery backup being connected to 230 V. This is practical if the installer is not a qualified electrician but still wants to be able to test the system.

Regulations and certifications

Requirements that the product meets

Table 13. The product meets the following requirements.

EMC:	EMC Directive 2014 / 30EU
Electricity:	Low voltage directive: 2014/35 / EU
CE:	CE directive according to: 765/2008

NOTE

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).

CE

Expected operating time in the event of a power failure (with new batteries)

System voltage	Number of batteries	Battery type	Load: 0.5 A	Load: 1 A	Load: 2 A	Load: 4 A	Load: 6 A	Load: 8 A
24 V	2 pcs	7.2 Ah	12 h	5 h	2 h	1 h	30 min.	15 min.
24 V	2 pcs	14 Ah	24 h	12 h	5 h	2 h	1 h	45 min.

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
* 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: CEO 3

Table 14. CEO3-ECO

Info	Explanation
Article name	CEO3-ECO
Product description	CEO 3 is the next generation circuit board for simpler battery backups. Advanced functions that were not previously possible in simpler battery backups are now available as standard. CEO 3 is manufactured with fewer components than before, which reduces the environmental impact.
Measure	120 x 55 mm x 52 mm
Own consumption	50 mA
Fuses	See table: Fuses.
Outputs	Output: two load outputs.
Insurance	Load output: + secured.
Max load	Maximum load is 10 A per load output (T2A is mounted from the factory) and the card's total load must not exceed 16 A.
Alarm outputs	Alarm outputs: Sum alarm in case of fuse fault, see indication below. Alarm on potential-free relay contact.
Alarm	Undervoltage, lights up red in the event of a power failure until the battery voltage drops below the alarm limit.
Alarm via	Triggered load securing, potential-free shifting, CO / NO.
Indication	Display showing operating status, alarms and faults. Operating indication: one indication diode per load output +/-. Solid green light = normal operation.

Control alarm limit with JU2

Control alarm limit

Alarm for low battery voltage in battery operation can be controlled.

By jumpering JU2, the limit for when the unit should give an alarm can be lowered.

Alarms are given when the battery voltage in battery drops below the limit.

Table 15. Low battery voltage alarm limit

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[a.] The unit is delivered with jumper on JU2

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Table 16. Fuses.

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WARNING FOR REPLACING FUSES (CURRENT STRENGTH, A)

There is a risk of damage if the fuse is changed to a larger one than what the unit is delivered with. The function of the fuse is to protect the connected load and cables against damage and fire. It is not possible to change the fuse to a larger one to increase the power output.

Power supply

Power supply - Technical Data LRS-150-24

In:
BT-5 Medium

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.

Technical data enclosures

Enclosures - Technical Data M

Info	Explanation
Name	M
Enclosure class	IP 20
Measure	Height: 242 mm, width: 350 mm, depth: 150 mm.
Height units	-
Mounting	Wall
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	White
Cable entries, number	5
Batteries that fit	2 pcs 12 V 7.2 Ah or 2 pcs 12 V 14 Ah.
Place for fan	No Yes: 10 A, 24 V units.

Link to the latest information

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

ECO

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) occour after the warranty period has expired.

CE marking

Each product has a CE label with information about the product and contact information for the manufacturer. If you are missing something or need more information, you should firstly turn to retailers who will also be able to answer questions about warranty and support. You can always contact the manufacturer if you have questions about the product's performance.

CE

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.

Contact us
Milleteknik AB

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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.

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

Table 17. 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 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.

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

Table 18. 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.

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.

Table 19. 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			

Medium current	7.2 Ah	14 Ah	28 Ah	45 Ah
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

Subject to typos.

Address and contact details

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