

CODE: **Power supplies EN54C series v.1.2/VII**
NAME: **Power supplies for fire alarm systems and smoke and heat control systems.**

EN



“This product is suitable for the systems designed in compliance with the standards EN 54-4 and EN 12101-10”

Functional requirements	Requirements according to standards	Power supplies EN54C series
Two independent power sources	YES	YES
EPS network failure indication	YES	YES
Two independent power supply outputs protected against short circuits	YES	YES
Temperature compensation of the battery charging voltage	YES	YES
Measurement of the resistance of the battery circuit	YES	YES
LoB low battery voltage indication	YES	YES
Recharging battery to 80% of rated capacity within 24 hours	YES	YES
Protection against deep battery discharge	YES	YES
Protection against short-circuit at the battery terminals	YES	YES
Charging circuit failure Indication	YES	YES
Short-circuit protection	YES	YES
Overload protection	YES	YES
Output of collective failure ALARM	YES	YES
EPS technical output	YES	YES
Low output voltage indication	–	YES
High output voltage indication	–	YES
Power supply failure indication	–	YES
Protection against surges	–	YES
Input of external failure indication EXTi	–	YES
Tamper switch unwanted enclosure opening	–	YES

PSU features

- Compliant with the requirements of the EN 54-4:1997+AC:1999+A1:2002+A2:2006 EN 12101-10:2005+AC:2007
- 27,6 V DC uninterruptible power supply
- available versions with **2 A / 3 A / 5 A / 10 A** current efficiencies
- available versions with space for **7 Ah – 65 Ah** batteries
- independently protected outputs AUX1 and AUX2
- high efficiency (up to 89%)
- low level of voltage ripple
- microprocessor-based automation system
- measurement of the resistance of the battery circuit
- automatic temperature-compensated charging
- automatic battery test
- two-stage battery charging process
- accelerated battery charging
- monitoring of the continuity of the battery circuit
- monitoring of the battery voltage
- monitoring of charging and maintenance of the batteries
- cooperation with EN54C-LB4 and EN54C-LB8 fuse modules (optional equipment)
- cooperation with EN54C-LS4 and EN54C-LS8 sequential modules (optional equipment)
- optical indication – LED panel
- deep discharge battery protection (UVP)
- battery overcharge protection
- the LoB low battery voltage indication
- battery output protection against short-circuit and reverse connection
- output voltage control
- fuse monitoring of AUX1 and AUX2 outputs
- relay output of collective failure ALARM
- EPS relay output indicating 230 V power loss
- the EXTi input of external failure
- protections:
 - SCP short-circuit protection
 - OLP overload protection
 - OVP overvoltage protection
 - Surge protection
 - Antisabotage protection – Tamper
- closing the enclosure - lock
- convection cooling (forced only in EN54C-10Axx)
- warranty - 3 years



General description.

Buffer power supplies has been designed for an uninterrupted supply of fire alarm systems, smoke and heat control systems, fire protection equipment and fire automatics requiring stabilized voltage of 24 V DC ($\pm 15\%$). Power supplies are fitted with two independently protected AUX1 and AUX2 outputs, which provide a voltage of 27,6 V DC and total current efficiency depending on version:

Power supply model	Battery	Continuous operation I _{max a}	Instantaneous operation I _{max b}
EN54C-2A7	7 Ah	1,6 A	2 A
EN54C-2A17	17 Ah	1,2 A	
EN54C-3A7	7 Ah	2,6 A	3 A
EN54C-3A17	17 Ah	2,2 A	
EN54C-3A28	28 Ah	1,8 A	
EN54C-5A7	7 Ah	4,6 A	5 A
EN54C-5A17	17 Ah	4,2 A	
EN54C-5A28	28 Ah	3,8 A	
EN54C-5A40	40 Ah	3,2 A	
EN54C-5A65	65 Ah	2,4 A	
EN54C-10A17	17 Ah	9,2 A	10 A
EN54C-10A28	28 Ah	8,8 A	
EN54C-10A40	40 Ah	8,2 A	
EN54C-10A65	65 Ah	7,4 A	

In case of power loss, PSU switches to battery power, providing uninterruptible power supply. Power supply unit is housed in a metal enclosure (color red RAL 3001) with space for battery. Power supply units works with maintenance-free lead acid batteries made with AGM technology or gel technology.



Functional class EN 12101-10:2005+AC:2007	A
Mains supply	~230 V; 50 Hz
Efficiency	89% max
Output voltage at 20±C	22,0 V – 27,3 V DC - buffer operation 20,0 V – 27,3 V DC - battery-assisted operation
Maximal resistance of the battery circuit	300 m Ohm
Ripple voltage (max.)	30 – 150 mVp-p max.
Current consumption by the PSU during battery-assisted operation	52 – 85 mA
Coefficient of temperature compensation of the battery voltage	-36 mV/ °C (-5°C + 65°C)
The LoB low battery voltage indication	U _{BAT} < 23 V, during battery mode
Overvoltage protection OVP	U > 32 V ± 2 V, automatic recovery
Short-circuit protection SCP	F _{AUX1} , F _{AUX2} melting fuse (failure requires fuse replacement)
Overload protection OLP	105 – 150% of power supply, automatic recovery
Battery circuit protection SCP and reverse polarity connection	F _{BAT} melting fuse (failure requires fuse replacement)
Deep discharge battery protection UVP	U < 20 V (± 2%) – disconnection of the batteries
TAMPER output indicating enclosure opening	Microswitch TAMPER
Technical outputs:	
- EPS FLT; indicating AC power failure	- relay type: 1 A @ 30 V DC / 50 V AC - 10s time lag.
- ALARM; indicating collective failure	- relay type: 1 A @ 30 V DC / 50 V AC
EXTi technical inputs	Closed input - no indication Open input - alarm
Optical indication:	- LEDs on PCB of power supply unit (see section 3.3) - LED panel <ul style="list-style-type: none"> · 230 V mains power supply ON · DC power at AUX outputs · failure indication
Additional equipment (not included)	- fuse modules: EN54C-LB4, EN54C-LB8 - sequential modules: EN54C-LS4, EN54C-LS8
Operating conditions	I environmental class (EN 12101-10:2005+AC:2007), -5°C + +40°C
Enclosure:	Steel plate DC01, 1,0 – 1,5mm, color: RAL3001 (red)
Closing:	Key lock
Certificates, declarations, warranty	Certificate of constancy of performance CNBOP-PIB No 1438-CPR-0628, certificate of approval CNBOP-PIB No 3501/2019, CE, RoHS, 3 years from production date
Notes:	Enclosure does not adjoin mounting surface so that cables can be led. Convection cooling.

	PSU power	Charging current	Enclosure dimensions
EN54C-2A7	56,8 W	0,4 A	335 x 308 x 82 [mm]
EN54C-2A17		0,8 A	390 x 406 x 88 [mm]
EN54C-3A7	85,2 W	0,4 A	335 x 308 x 82 [mm]
EN54C-3A17		0,8 A	390 x 406 x 88 [mm]
EN54C-3A28		1,2 A	425 x 411 x 178 [mm]
EN54C-5A7	142 W	0,4 A	335 x 308 x 82 [mm]
EN54C-5A17		0,8 A	390 x 406 x 88 [mm]
EN54C-5A28		1,2 A	425 x 411 x 178 [mm]
EN54C-5A40		1,8 A	425 x 411 x 178 [mm]
EN54C-5A65		2,6 A	416 x 618 x 180 [mm]
EN54C-10A17	284 W	0,8 A	390 x 406 x 88 [mm]
EN54C-10A28		1,2 A	425 x 411 x 178 [mm]
EN54C-10A40		1,8 A	425 x 411 x 178 [mm]
EN54C-10A65		2,6 A	416 x 618 x 180 [mm]

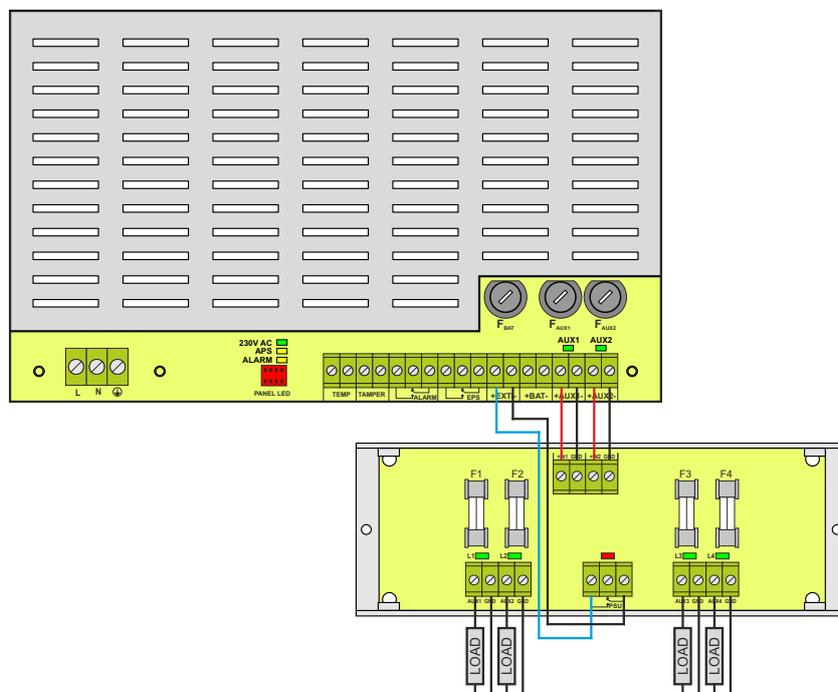


Fuse modules EN54C-LB4 and EN54C-LB8.

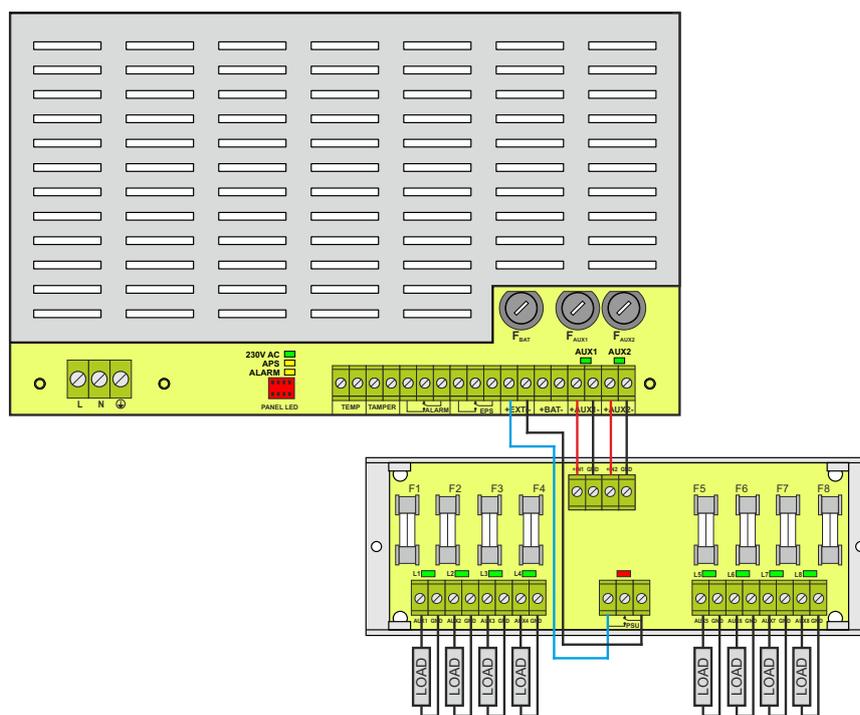
Fuse modules EN54C-LB4 and EN54C-LB8 allow to connect 4 or 8 receivers to the PSU. Output state is indicated by green LEDs.

Blown fuse signal is transmitted to the input of collective failure EXTi (ALARM) and saved in the internal memory of PSU.

The PSU's relay output can also be used for remote control, including external optical indication.



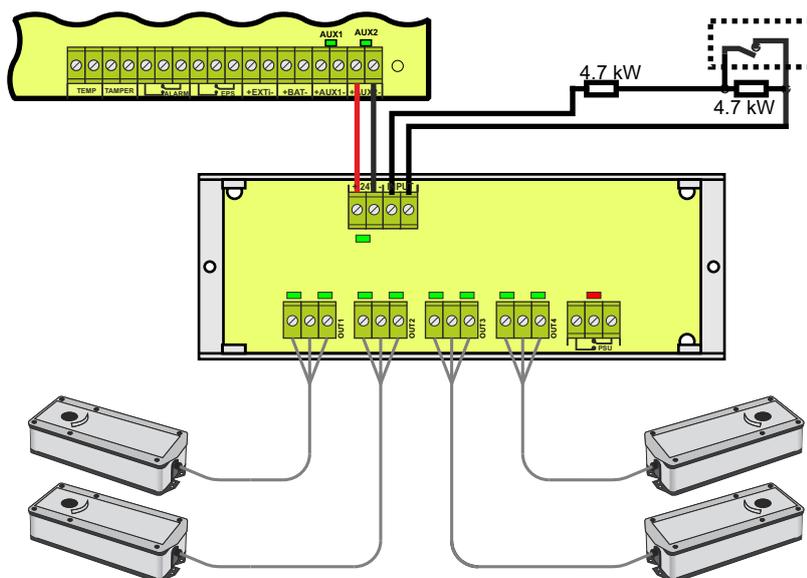
Example of a connection with the fuse module EN54C-LB4.



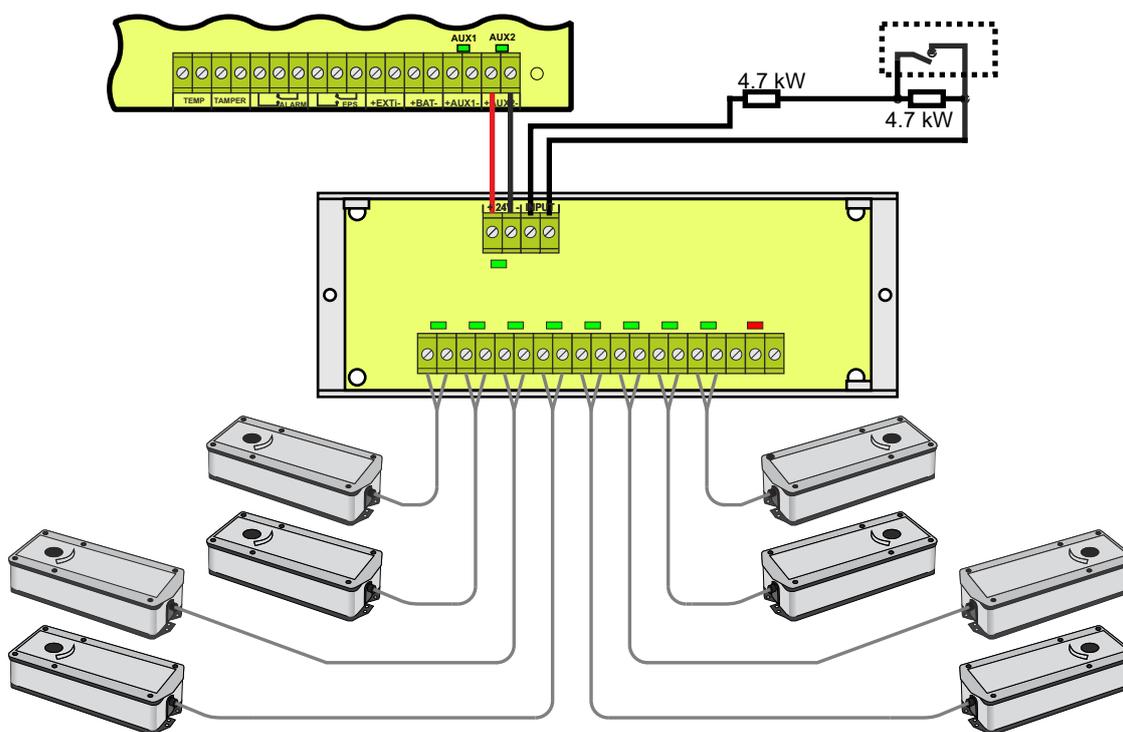
Example of a connection with the fuse module EN54C-LB8.

EN54C-LS4 and EN54C-LS8 sequential modules.

The sequential modules are designed for use with electric actuators without return spring (EN54C-LS4) and with electric actuators with return spring (EN54C-LS8) used for fire dampers and smoke vents. When switching on the electric actuator, a short-term current surge, exceeding its rated current, may occur. If multiple electric actuators are connected, the above-mentioned surge current poses a risk of incorrect operation of the power supply (e.g. triggering the protection of output circuit), despite not exceeding the current capacity of the power supply. The sequential switching module causes the receivers connected to its outputs to be sequentially switched, with a delay of 100 ms. Thanks to this solution, the surge current is reduced to the value ensuring correct operation of the power supply.



Example of connection of the EN54C-LS4 sequential module.



Example of connection of the EN54C-LS8 sequential module.