Pulsar®
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Buffer power supply units

compliant with EN 54-4
Intended to fire protection systems

5 YEAR WARRANTY

ZŁOTY MEDAL 2016

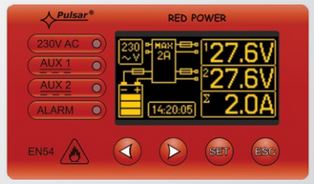
MTP Gold Medal
Securex 2016

CNBOP-PIB®

Buffer power supply units EN54 series

5 YEAR WARRANTY

LED display

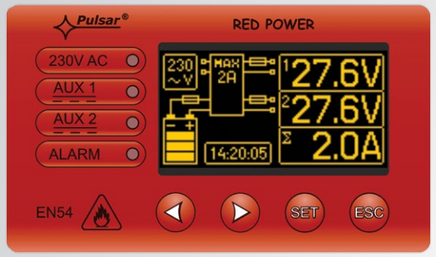


graphic LCD display

Features of power supply units

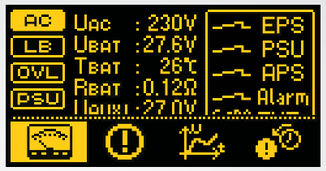
- In accordance with standards: EN 54-4, EN12101-10
- Certificate of conformity CNBOP No.1438-CPR-0385
- Certificate of approval CNBOP No.2174/2014
- available models – 27,6VDC / 2A; 3A; 5A; 7A
- fitting battery 2×17Ah, 2×28Ah, 2×40Ah
- independently protected outputs AUX1 and AUX2
- high efficiency
- low level of voltage ripple
- microprocessor-based automation system
- intelligent PSU overload protection
- measurement of resistance of battery circuit
- automatic temperature-compensated charging
- battery test
- two-stage battery charging process
- accelerated battery charging
- monitoring of continuity of battery circuit
- monitoring of battery voltage
- monitoring of battery fuse
- monitoring of charging and maintenance of batteries
- deep discharge battery protection (UVP)
- battery overcharge protection
- battery output protection against short-circuit andreverse connection
- load current control
- output voltage control
- fuse monitoring of AUX1 and AUX2 outputs
- 230VAC mains supply voltage measurement
- “SERIAL” communication port with implemented MODBUS RTU protocol
- free program – “PowerSecurity” for monitoring PSU operation parameters
- remote monitoring (option: WiFi, Ethernet, RS485, USB)
- remote battery test (additional modules required)
- cooperation with optional EN54-LB4 or EN54-LB8 fuse modules
- optical indication of PSU overload OVL
- acoustic indication of failure
- readings of electrical parameters, including: voltage, current, resistance of circuit, mains supply voltage
- failure memory
- adjustable delay for 230VAC power loss indication
- output of collective failure ALARM
- input of collective failure EXTi
- controlled relay output EXTo
- technical inputs/outputs with galvanic isolation
- EPS technical output indicating 230VAC power loss
- PSU technical output indicating PSU failure
- APS technical output indicating battery failure
- internal memory of PSU operating status
- protections:
  - SCP short-circuit protection
  - OLP overload protection
  - OHP overheat protection
  - OVP over voltage protection
  - surge protection
  - antisabotage protection – Tamper
- closing enclosure – lock
- convectional cooling
- warranty: 5 year from production date

Additional functions of LCD series



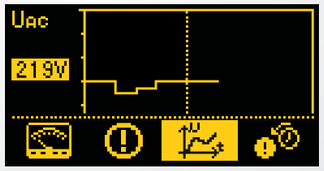
Additional functions of LCD series

- failure indication
- PSU settings adjusted from panel’s level
- 3 levels of access, password-protected
- operation memory of PSU
- real-time clock, battery-backed up
- an extensive range of information on LCD
- simple handling of power supply in LCD version



current parameters of PSU

current failures of PSU



parameters of PSU stored in memory

history of events

Model	Output voltage	Fitting battery	Total current	
			for continuous operation – $I_{MAX\ a}$ $I_o + I_{load}$	for intermittent operation – $I_{MAX\ b}$ $I_o + I_{load}$
With microprocessor-based operating control and LED display				
EN54-2A17	27,6VDC	2×17Ah	1,0A + 1,0A	2,0 + 0A
EN54-3A17	27,6VDC	2×17Ah	2,0A + 1,0A	3,0 + 0A
EN54-3A28	27,6VDC	2×28Ah	1,5A + 1,5A	3,0 + 0A
EN54-5A17	27,6VDC	2×17Ah	4,0A + 1,0A	5,0 + 0A
EN54-5A28	27,6VDC	2×28Ah	3,5A + 1,5A	5,0 + 0A
EN54-5A40	27,6VDC	2×40Ah	3,0A + 2,0A	5,0 + 0A
EN54-7A17	27,6VDC	2×17Ah	6,0A + 1,0A	7,0 + 0A
EN54-7A28	27,6VDC	2×28Ah	5,5A + 1,5A	7,0 + 0A
EN54-7A40	27,6VDC	2×40Ah	5,0A + 2,0A	7,0 + 0A
With microprocessor-based operating control and graphic LCD display				
EN54-2A17LCD	27,6VDC	2×17Ah	1,0A + 1,0A	2,0 + 0A
EN54-3A17LCD	27,6VDC	2×17Ah	2,0A + 1,0A	3,0 + 0A
EN54-3A28LCD	27,6VDC	2×28Ah	1,5A + 1,5A	3,0 + 0A
EN54-5A17LCD	27,6VDC	2×17Ah	4,0A + 1,0A	5,0 + 0A
EN54-5A28LCD	27,6VDC	2×28Ah	3,5A + 1,5A	5,0 + 0A
EN54-5A40LCD	27,6VDC	2×40Ah	3,0A + 2,0A	5,0 + 0A
EN54-7A17LCD	27,6VDC	2×17Ah	6,0A + 1,0A	7,0 + 0A
EN54-7A28LCD	27,6VDC	2×28Ah	5,5A + 1,5A	7,0 + 0A
EN54-7A40LCD	27,6VDC	2×40Ah	5,0A + 2,0A	7,0 + 0A

Features

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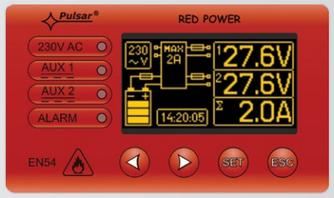


LED operation indication for EN54

- LEDs on PSU's PCB – LED panel
- LED panel:
  - output current readings
  - output voltage readings: AUX1, AUX2
  - resistance of battery circuit
  - mains supply voltage
  - failure codes with history

LCD operation indication for EN54

- LEDs on PSU's PCB – LCD panel
- LCD panel:
  - display of electrical parameters, e.g. voltage, current, resistance of circuit, mains voltage
  - failure indication
  - PSU settings adjusted from panel's level
  - 2 levels of password protected access
  - PSU operation history – 6144 values
  - failure history – 2048 events
  - real-time clock, battery-backed up

	EN54-2A17 (EN54-2A17LCD)	EN54-3A17 (EN54-3A17LCD)	EN54-3A28 (EN54-3A28LCD)	EN54-5A17 (EN54-5A17LCD)	EN54-5A28 (EN54-5A28LCD)	EN54-5A40 (EN54-5A40LCD)	EN54-7A17 (EN54-7A17LCD)	EN54-7A28 (EN54-7A28LCD)	N54-7A40 (EN54-7A40LCD)
Functional class EN 12101-10:2007	A								
Supply voltage	230VAC (-15%/+10%), 50Hz								
Output voltage	27,6VDC								
Continuous operation: Imax a	1A	2A	1,5A	4A	3,5A	3A	6A	5,5A	5A
Instantaneous operation: Imax b	2A	3A	3A	5A	5A	5A	7A	7A	7A
Battery charging current (continuous operation)	1A	1A	1,5A	1A	1,5A	2A	1A	1,5A	2A
Fitting battery	2×17Ah	2×17Ah	2×28Ah	2×17Ah	2×28Ah	2×40Ah	2×17Ah	2×28Ah	2×40Ah
Short circuit protection (SCP)	FAUX1, FAUX2 fuse (in case of failure, fuse-element replacement required)								
Overload protection (OLP)	Program – equipment								
Over voltage protection (OVP)	U>30,5V±0,5V – disconnecting supply output (cut off AUX+), automatic return								
Battery circuit protection SCP and reverse polarity connection	F_{BAT} fuse (in case of failure, fuse-element replacement required)								
Deep discharge battery protection UVP	U<20V (± 2%) – disconnection of batteries								
Low battery voltage indication	Ubat < 23V, during battery operation								
EXTi technical input	Voltage 'on' – 10÷30VDC Voltage 'off' – 0÷2VDC Level of galvanic isolation 1500V_{RMS}								
Controlled relay output EXTo	1A @ 30VDC / 50VAC								
Acoustic operation indication	Yes								
Enclosure	Steel plate DC01, 1,2mm, color: RAL 3001 (red)								
Dimensions	W=420 H=420 D=102 [mm]	W=420 H=420 D=102 [mm]	W=420 H=420 D=182 [mm]	W=420 H=420 D=102 [mm]	W=420 H=420 D=182 [mm]	W=420 H=420 D=182 [mm]	W=420 H=420 D=102 [mm]	W=420 H=420 D=182 [mm]	W=420 H=420 D=182 [mm]
Closing	Key lock								
Certification, declaration, warranty	CNBOP-PIB certificate of constancy of performance No. 1438-CPR-0385 and CNBOP-PIB certificate of admittance No. 2174/2014; Declaration of performance; 5 year from production date								

Technical outputs

EPS FLT; output indicating AC power failure:
- type – electronic, max 50mA/30VDC, galvanic isolation 1500V_{RMS} – time lag, approx. 10s/1m/10m/30m (+/-5%)

APS FLT; output indicating battery failure:
- type – electronic, max 50mA/30VDC, galvanic isolation 1500V_{RMS}

PSU FLT; output indicating PSU failure:
- type – electronic, max 50mA/30VDC, galvanic isolation 1500V_{RMS}

ALARM; indicating collective failure:
- relay type: 1A@30VDC/50VAC, galvanic isolation (version 1.1)

TAMPER; indicates enclosure opening:
- microswitch

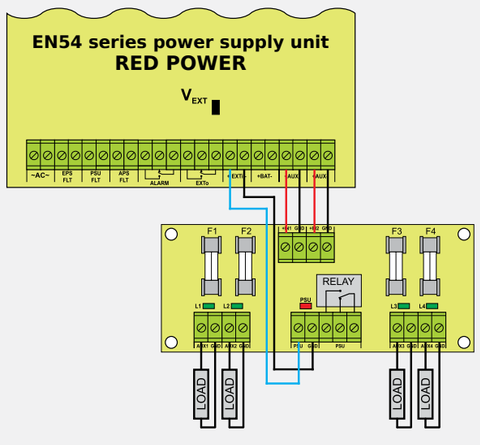
Fuse modules for power supply units of EN54 series

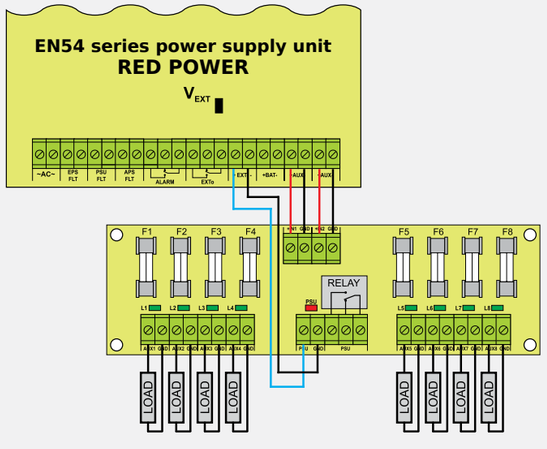
5 YEAR WARRANTY

EN54-LB4
LB4/0,5A/FTA fuse module EN54

EN54-LB8
LB8/0,5A/FTA fuse module EN54

	EN54-LB4	EN54-LB8
Supply voltage	20÷30VDC	
Output voltage	$U_{AUX}=U_{IN}$ (applying power)	
Current consumption	25÷42mA @ Uin=20÷30VDC	43÷73mA @ Uin=20÷30VDC
Number of power outputs	2 (IN1, IN2)	
Number of outputs	4 (AUX1÷AUX4)	8 (AUX1÷AUX8)
Short circuit protection (SCP)	4 × F 0,5A	8 × F 0,5A
LED operation indication	LEDs: L1,...,L4 – AUX1,...,AUX4 ouputs status PSU – failure indication	LEDs: L1,...,L8 – AUX1,...,AUX8 ouputs status PSU – failure indication
Technical outputs	PSU – technical output (OC type) indicating failure to connect to power supply PSU – technical output (relay type) indicating failure	
Enclosure	No, "open frame", IP00	
Dimensions	W=110,5 H=45 D=32 [mm]	W=150 H=45 D=32 [mm]
Operating conditions	II environmental class, -10°C ÷ +50°C	
Declarations, warranty	Declaration: CE, RoHS; 5 year from production date	
Installation	Spacers × 6	





Interfaces

5 YEAR WARRANTY

INTR – Interface RS485-TTL
- Destination: connection of PSU of PSBEN or EN54 series with RS485
- Power supply: 5VDC/max.30mA from "SERIAL" socket of power supply unit
- Galvanic separation between RS485 and TTL interfaces

INTE – Interface ETHERNET
- Destination: Power supplies of PSBEN or EN54 series are connected with ETHERNET network
- Power supply: 5VDC/max.0,95W from "SERIAL" socket of power supply unit
- Assigning static or dynamic IP address (DHCP server)
- **Permission of Scientific and Research Centre for Fire Protection – National Research Institute for use with power supplies of EN54 series in fire alarm systems**

INTW – Interface Wi-Fi
- Destination: Connecting power supply unit of PSBEN or EN54 series with Wi-Fi network
- Power supply: 5VDC/max.210mA from "SERIAL" socket of power supply unit
- Assigning a static or dynamic IP address (DHCP server)
- **Permission of Scientific and Research Centre for Fire Protection – National Research Institute for use with power supplies of EN54 series in fire alarm systems**

INTU – Interface USB-TTL
- Destination: Power supplies of PSBEN or EN54 series are locally connected to computer via USB
- Power supply: 5VDC/max.25mA from computer's USB port
- Compliance of USB interface: USB1.1 / USB 2.0 (Full Speed)
- Transmission's speed: max. 115200 bauds, with parity check

INTC – Programmer
- Destination: WiFi interface configuration: INTW, INTRW
- Power supply: 5VDC/max.25mA from computer's USB port
- Compliance of USB interface: USB1.1 / USB 2.0 (Full Speed)
- Transmission's speed: max. 115200 bauds, with parity check

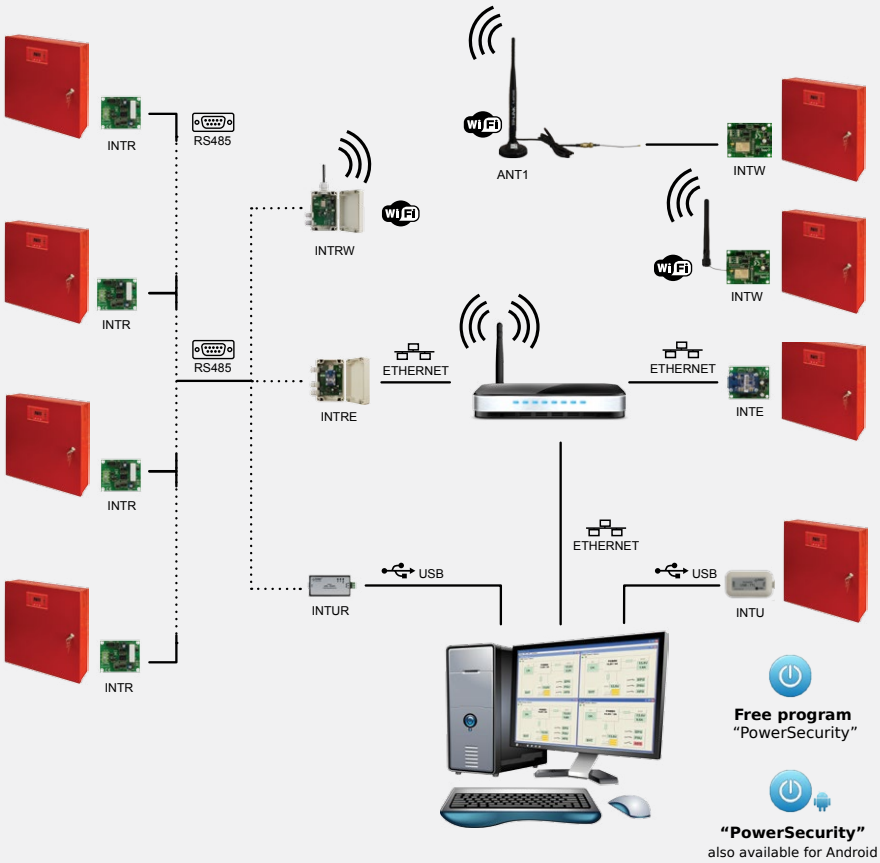
INTRE – Interface RS485-ETHERNET
- Destination: Device to convert signals between RS485 and ETHERNET network
- Power supply: 10÷30VDC/max.0,95W
- Assigning static or dynamic IP address (DHCP server)
- **Permission of Scientific and Research Centre for Fire Protection – National Research Institute for use with power supplies of EN54 series in fire alarm systems**

INTRW – Interface RS485-Wi-Fi
- Destination: A device to convert signals between RS485 and Wi-Fi network
- Power supply: 10÷30VDC/80÷20mA
- Assigning static or dynamic IP address (DHCP server)
- **Permission of Scientific and Research Centre for Fire Protection – National Research Institute for use with power supplies of EN54 series in fire alarm systems**

INTUR – Interface USB-RS485
- Destination: Data conversion from RS485 to PC via USB port
- Power supply: 5VDC/max.25mA via USB port
- Compliance of USB interface: USB1.1 / USB 2.0 (Full Speed)
- Transmission's speed: max. 115200 bauds, with parity check

ANT1 – 2.4GHz WiFi Antenna with Magnetic Base
- Destination: Omnidirectional antenna is designed for operation in 2.4GHz WiFi band
- Frequency / Impedance: 2,4GHz / 50 Ohm
- VSWR / Energy gain: <2,0 / 5dBi
- Polarization: Vertical
- Cable: length 1,5m / SMA-RP/U.FL plug

Diagram of connections between power supply unit and interfaces



"PowerSecurity" application

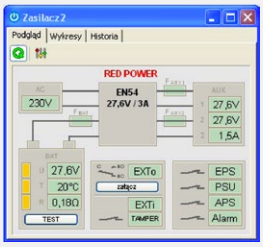
PowerSecurity program enables remote monitoring of parameters of power supply units of PSBEN or EN54 series equipped with a communication interface. Application allows configuring connections, analyzing current parameters and managing groups of power supply units.

In case of power supply units of EN54 series, remote desktop window allows monitoring following parameters:

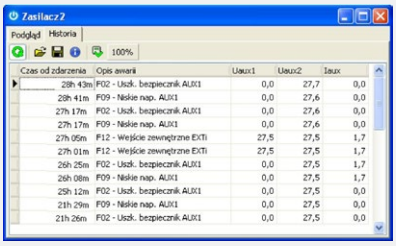
1. Voltage at AUX1 and AUX2 outputs and total current
2. Status and value of 230V mains supply
3. Voltage, battery level, temperature and internal resistance of battery, optional remote battery test
4. Status of technical outputs (EPS, PSU, APS, Alarm)
5. Status of input of collective failure – EXTi
6. Status of controlled relay output EXTo
7. Status of TAMPER input

Additionally, it is possible to read history of events and in case of power supplies fitted with LCD display to read, history of parameters.

For power supply unit with LED display

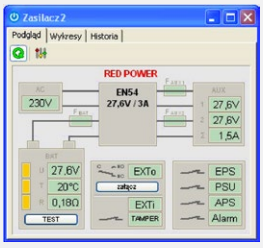


Remote desktop window of PSU

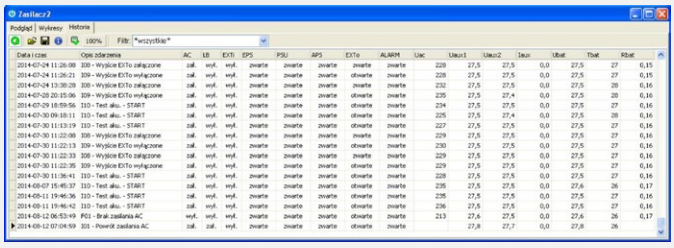


Event log

For power supply unit with LCD display



Remote desktop window of PSU



Event log

History of parameters

Contact us

Pulsar, Siedlec 150
32-744 Lapczyca, Poland

sales@pulsar.pl

+48 14 610 19 45

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