



## Characteristics

- PS3-100/iNELS is a stabilized switching power supply, with the total power of 100 W.
- Used to supply central units and external master within intelligent electro-installation iNELS.
- Through BUS separators from the supply voltage BPS3-01M and BPS3-02M, it supplies BUS lines from which iNELS peripheral units are also powered.
- Used in the instrumentation field.
- Fixed output voltage DC 27.6 V and DC 12.2 V, galvanically isolated from the mains.
- Power source of 27 V and 12 V have a common ground terminal GND.
- Electronic short circuit protection, high-capacity and thermal overload, over voltage.
- UPS functions - backup of output 24 V and 12 V on connected batteries.
- Recharging the batteries from 27.6 V source.
- Protection battery backup fuse - protection against short circuit and reverse polarity battery.
- Continuously adjustable maximum battery charging current.
- Indication of operating and fault conditions 6 LED diodes on the front panel of the power supply.
- 2 STATUS outputs with open collector for reporting operational status of the source.
- Source supplies power to the priority system iNELS, the remaining power is used for rechargeable batteries.
- When the battery is fully discharged, the battery is automatically disconnected from the load.
- PS3-100/iNELS in 6-MODULE version is designed for mounting into a switchboard, on DIN rail EN60715.

## General instructions

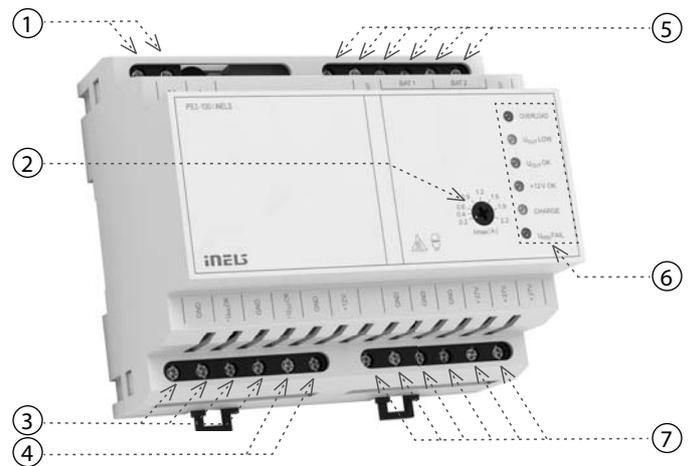
### SUPPLYING THE SYSTEM

To supply system units we recommend to use power supply PS3-100/iNELS. Number of power supplies is given by a sum of rated currents connected to units plus a sufficient reserve. In case there is security system included, we recommend to use this backed-up power supply in a cove with protective contact

## Description of device function

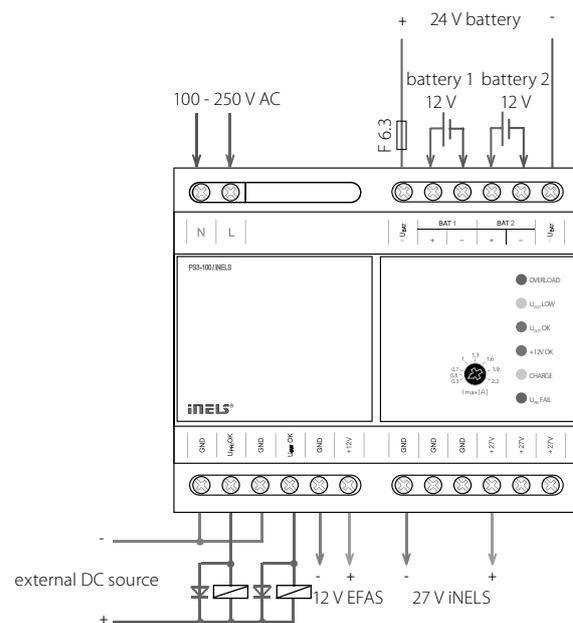
- The device consists of several functional blocks.
- The basic part is 100 W power supply with 2 output voltage levels.
  - Voltage of 27.6 V is used to supply the system iNELS and to recharge the batteries.
  - Voltage of 12.2 V is for power as intrusion detectors (ESAS) or EFAS.
  - Both voltages are available without interruption during power AC power supply (UPS function) - assuming they are connected to a backup battery.
- Other parts of the source circuits are battery backup and recharge, which provide switching mode connection, charging and disconnecting the battery.
  - When in the backup mode, the battery is completely discharged, the circuit is immediately switched off to avoid deep discharge. The maximum discharge current is also guarded - when exceeded, the batteries are again disconnected.
  - If the switched source is working (oscillating), and its output voltage are greater than 26.9 V, the backup batteries are charged by the current, and the maximum value is set by trimmer on the panel source.
  - When charging the yellow LED CHARGE illuminates. The source first feeds the iNELS system, and the remaining capacity of up to 100 W only recharges the battery.
  - If the output is high, this disconnects the charge (the yellow LED CHARGE switches off).
  - Upon further increasing, the load further decreases the voltage source and the load current also flows from the battery (power supply and battery power to the load together).
  - If the source is disconnected from the AC network (does not oscillate), and you connect batteries now, the batteries remain disconnected and power outputs are without power. To activate, the source must be connected to the power supply.
- The last part of the unit are signaling circuits and status outputs.
  - STATUS outputs (see technical data) are equipped with current limiting, so they can switch signaling components directly without external resistors (e.g. LED, optocouplers or relay coil).
  - The LED signaling function is given in the table of technical parameters and illustratively described in seven case studies.

## Description of device



1. Terminals of supply voltage
2. Setting the charge current
3. State output terminals
4. Terminals of output voltage 12 V
5. Terminals for connecting the batteries
6. Indication LED
7. Terminals of output voltage 27 V

## Connection



PS3-100/iNELS

AC Input	
Power supply:	100 - 250 V AC / 50 - 60 Hz
Dissipated power:	max. 20 W
Power load (apparent / active):	max. 13 VA / 2 W
Power consumption at max. load (apparent / active):	max. 180 VA / 111 W
Protection:	- safety fuse T3.15 A inside the unit - electronic protection (short circuit current and thermal overload)

DC Input	
Power supply:	DC 24 V (two 12 V batteries in series)
Protection:	- safety fuse F 6.3 A external - electronic protection against current overload
Terminals for connecting the battery:	- each battery separately - separately routed extreme terminals (24 V)
Automatic disconnect the battery:	- for the battery voltage < 21 V - when exceeding discharge current 4.2 A

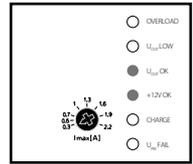
Outputs	
Output voltage 1:	27.6 V
Max. capacity:	3.6 A
Output voltage 2:	12.2 V
Max. capacity:	0.35 A
The overall efficiency of resources:	about 88 %
Time delay after connecting to the AC network:	max. 1 s
Max. charging current:	adjustable from 0.2 - 2.2 A

LED Signalization	
Output voltage 27 V OK ( $U_{OUT} > 24 V$ ):	green LED $U_{OUT}$ OK
Switch. power supply does not work (does not oscillate):	flashing red LED $U_{PRI}$ FAIL (if a battery is connected)
Low output voltage ( $21 V < U_{OUT} < 24 V$ ):	yellow LED $U_{OUT}$ LOW
Output voltage 12 V OK ( $U > 11 V$ ):	green LED + 12 V OK
Overloading the power supply ( $U_{OUT} < 21 V$ ):	red LED OVERLOAD
Charging the battery (charging current > 50 mA):	yellow LED CHARGE

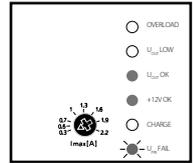
Output status	
STATUS output 1 ( $U_{PRI}$ OK):	closed, when power supply works (not blinking LED $U_{PRI}$ FAIL)
STATUS output 2 ( $U_{OUT}$ OK):	closed, if $U_{OUT} > 21 V$ (not lit red LED OVERLOAD)
Output type:	open collector current limited
Max. connectable voltage:	50 V DC
Max. current output:	50 mA
Voltage drop on the switch max:	at 10 mA ... 140 mV at 30 mA ... 400 mV at 50 mA ... 700 mV

Other Data	
Electric strength AC input - output:	4 kV
The connection terminals:	row
Cable size (mm <sup>2</sup> ):	max. 1x 2.5, max. 2x 1.5 (with sleeve max. 1x 1.5)
Operating temperature:	-20 °C ... +55 °C
Storage Temperature:	-30 °C ... +70 °C
Working humidity:	20 ... 90 % RH
Cover:	IP20 device, IP40 mounting in the switchboard
Overvoltage category:	III.
Degree of pollution:	2
Working position:	arbitrary, vertical is optimum
Installation:	on the DIN rail EN60715
Execution:	6-MODULE
Dimensions:	90 x 105 x 65 mm
Weight:	401 g
Related standards:	general: EN61204; safety: EN61204-7; EMC: EN61204-3

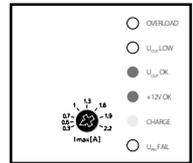
switching power supply works correctly  
output voltage 27 V is correct ( $U_{OUT} > 24 V$ )  
output voltage 12 V is correct  
batteries are not recharged



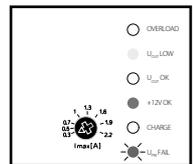
switching power supply not working correctly - UPS mode  
output voltage 27 V is correct ( $U_{OUT} > 24 V$ )  
output voltage 12 V is correct  
batteries are not recharged



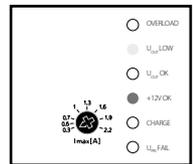
switching power supply works correctly  
output voltage 27 V is correct ( $U_{OUT} > 24 V$ )  
output voltage 12 V is correct  
batteries are recharged



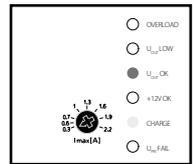
switching power supply not working correctly - UPS mode  
low output voltage 27 V ( $21 V < U_{OUT} < 24 V$ )  
output voltage 12 V is correct  
batteries are not recharged



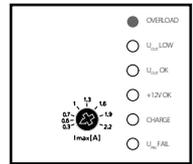
switching power supply works correctly  
low output voltage 27 V ( $21 V < U_{OUT} < 24 V$ )  
output voltage 12 V is correct  
batteries are not recharged



switching power supply works correctly  
output voltage 27 V is correct ( $U_{OUT} > 24 V$ )  
low output voltage 12 V (short-circuit, overload)  
batteries are recharged



switching power supply is overload  
low output voltage 27 V ( $U_{OUT} < 21 V$ )  
low output voltage 12 V  
batteries are not recharged



Warning

Before the device is installed and operated, read this instruction manual carefully and with full understanding and Installation Guide System iNELS3. The instruction manual is designated for mounting the device and for the user of such device. It has to be attached to electro-installation documentation. The instruction manual can be also found on a web site [www.inels.com](http://www.inels.com). Attention, danger of injury by electrical current! Mounting and connection can be done only by a professional with an adequate electrical qualification, and all has to be done while observing valid regulations. Do not touch parts of the device that are energized. Danger of life-threat! While mounting, servicing, executing any changes, and repairing it is essential to observe safety regulations, norms, directives and special regulations for working with electrical equipment. Before you start working with the device, it is essential to have all wires, connected parts, and terminals de-energized. This instruction manual contains only general directions which need to be applied in a particular installation. In the course of inspections and maintenance, always check (while de-energized) if terminals are tightened.