

## Rack PoE+ type switches – RS series



### 1) Important pre-recommendations and information regarding rack type PoE switch usage

#### 1.1) Introduction

PLEASE KEEP THIS MANUAL – set of recommendations and user manuals for Lanberg rack type PoE switches, detailing the models supported below:

- RSFE-16P-2C-150
- RSFE-16P-2C-250

contains logistics and technical data, instructions, and regulations that must be adapted and followed during transport, assembly, use and maintenance of above-mentioned products. Do not use the device before carefully reading and adhering to all the information and safety precautions contained in the user's manual. Keep this manual for later use. All photos, drawings included in the manual are for reference only.

**NOTE:** For the most up-to-date version of this manual, please visit our website at [www.lanberg.eu](http://www.lanberg.eu).

#### 1.2) Contents of the package

- Rack type PoE switch,
- Mounting ears for installation in 19",
- Power cord.

**NOTE:** The contents of the packaging, its individual elements and rack type switches may vary depending on the particular model.

#### 1.3) General safety precautions

- The device specifications must be strictly observed when turning the product ON, using it and connecting the equipment to any external products,
- The device must not be used to work outside the rated values given in specification.  
The warranty does not cover any damage caused by a deviation from these values when using the device,
- Main's outlet (AC) should be easily accessible and located near the equipment. Remember to connect the device only to a grounded socket,
- **NEVER** allow a situation where sparks or flames could occur near the device. The aftermath of such case could have very negative consequences for people and things in the vicinity,
- If smoke comes out of the device, disconnect the AC power supply as soon as possible,
- In the event of a fire, immediately and (without unnecessary delay) disconnect the power supply and notify the fire department of the situation by dialing their assigned emergency number, in the country of your stay,
- The use of the device does not require specialized training or electrical qualifications. It has a similar function to the PoE switches, indicating of its intended use to power compatible terminal equipment. The device can be used for IP, CCTV surveillance, access points in hotels, warehouses, companies, etc.,
- The product is intended for indoor use. Do not rebuild and / or modify the products and / or its components,
- The manufacturer and distributor are not responsible for any damages resulting from improper use and improper handling of the product (not in accordance with this manual).

# Quick Installation Guide

## Rack type PoE+ switches

### 1.4) Specification

#### 1.4.1) RSFE-16P-2C-150

Performance	Value	Performance	Value
Napięcie wejściowe	100 ~ 240 V	Napięcie przełącznika	52 V
Częstotliwość wejściowa	50 / 60 Hz	Częstotliwość przełącznika	50 / 60 Hz
Natężenie wejściowe	max. 2.5 A	Natężenie przełącznika	2.9 A
Budżet PoE	150 W	Max. pobór mocy	160 W
Max. PoE na port	30 W (af + at)	Porty PoE	16x 100 Mb/s (LAN: 1 ~ 16)
Tablica adresów MAC	16 K	Porty Uplink	2x 1000 Mb/s (LAN 17 ~ 18)
Funkcje	Link & PoE 250 m (@ max. 10 Mb/s); VLAN; disabling PoE ports from the largest to the smallest (by numbering) after exceeding the PoE budget		

#### 1.4.2) RSFE-16P-2C-250

Performance	Value	Performance	Value
Input voltage	100 ~ 240 V	Switch voltage	52 V
Input frequency	50 / 60 Hz	Switch frequency	50 / 60 Hz
Input current	max. 3.5 A	Switch current	4.8 A
PoE budget	250 W	Max. power consumption	260 W
Max. PoE per port	30 W (af + at)	PoE ports	16x 100 Mb/s (LAN: 1 ~ 16)
MAC address table	16 K	Uplink ports	2x 1000 Mb/s (LAN 17 ~ 18)
Functions	Link & PoE 250 m (@ max. 10 Mb/s); VLAN; disabling PoE ports from the largest to the smallest (by numbering) after exceeding the PoE budget		

## 2) The importance of individual elements

### 2.1) LEDs and their meaning

Lanberg's rack type PoE switch, has, on the front panel, multiple LEDs. Their number and meaning may vary depending on your model. The below-displayed table contains an explanation of each LED regardless of the rack switch model.

LED	Meaning		Solid LED	Blinking LED	LED is turned off
Power	Power		Device is turned on	-	Device is turned off
1 – 16	Port (LAN / Ethernet z PoE)	LINK / ACT	Device is connected	Data transmission / reception is in progress	Device is not connected
		PoE	Device with PoE mode is connected	PoE port has exceeded its budget or there is a problem of establishing PoE communication	Device without PoE mode is connected

# Quick Installation Guide

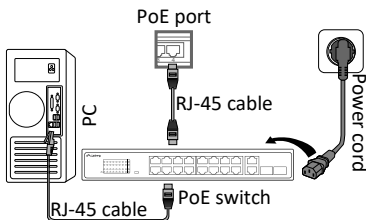
## Rack type PoE+ switches

17 – 18	Port (LAN / Ethernet / SFP)	LINK / ACT	Device is connected	Data transmission / reception is in progress	Device is not connected
		Speed	Device operates at speeds up to 1 Gb/s	-	Device operates at speeds up to 10 or 100 Mb/s

### 2.2) Rack PoE switch elements and their features / properties

Lanberg's rack type PoE switch contains, on its enclosure, a number of elements. Their number and meaning may vary depending on your model. Below displayed table contains explanation of each element or button regardless of the switch model.

Element		Description / features / properties
Power socket		<ul style="list-style-type: none"> <li>RSFE-16P-2C-150 model: data incl. in specification</li> <li>RSFE-16P-2C-250 model: data incl. in specification</li> </ul>
LAN ports / SFP		<p>Allows you to directly connect up to 16 devices (including PoE) and 2 devices (without PoE) within local network to the PoE switch</p> <ul style="list-style-type: none"> <li>RSFE-16P-2C-150 model: 16 PoE 100 Mb/s ports + 2 Uplink (Combo) 1000 Mb/s ports</li> <li>RSFE-16P-2C-250 model: 16 PoE 100 Mb/s ports + 2 Uplink (Combo) 1000 Mb/s ports</li> </ul>
Toggle switch	In „Normal“ position	All ports work in standard mode
	In „VLAN“ position	Allows the operation of LAN ports: 1 ~ 16 separated from each other, while allowing each port in the range to communicate with the other two
	In „PoE Extend 250 m“ position	Allows the operation of LAN ports: 1 ~ 16 at a distance of up to 250 meters with a speed max. up to 10 Mb/s



### 3) Turning on the PoE switch and connecting devices to it

- Step 1) Connect the power by inserting the end of the PoE switch's power cord into its power socket located at the back of the rack PoE switch,
- Step 2) Connect one end of RJ-45 crossover (Ethernet) cable to one of the LAN ports located on the rack PoE switch and its other end to the user's end device (e.g., PC, PoE camera etc.). The connection will be automatically established.

### 4) PoE switch features

#### 4.1) Basic operation feature

The device operates in standard mode if the toggle switch is set to „Normal“ position. All ports can communicate with each other. The maximum speed is as specified.

#### 4.2) VLAN feature

The device supports the full separation of ports between themselves. Changing toggle switch to the „VLAN“ position will prevent all 16 ports from communicating with each other except for the Uplink ports, which can communicate with all ports simultaneously. After toggling the connection (called a „link“) will be reset and separated between the ports.

#### 4.3) PoE 250 m feature

The switch supports an extended working distance between it and the end-device. In this mode, you can use one cable with a maximum length of 250 m. It is imperative that the cable is certified for a minimum category 5e, has 8 wires, and the conductor is made of pure copper (100% CU). By changing toggle switch to the „PoE Extend 250 m“ position, all 16 ports will support longer distance operation. After toggling the power on the PoE ports will still be delivered, however, the connection (called as a link) will be reset and speed will be max. up to 10 Mb/s.

#### 4.4) Turning off PoE ports after exceeding the PoE budget feature

The PoE switch provides a full, total PoE budget of 150 or 250 W (depending on model). PoE ports can operate in the IEEE 802.3af or IEEE 802.3at standard, ensuring maximum power supply of connected devices up to 30 W per port. If the total available PoE budget is exceeded, the switch chipset will turn off the power on the PoE ports, starting with the highest numbering of the PoE port to the smallest. The shutdown procedure will be stopped when a total load of connected devices will be lower than the available PoE budget. It is recommended to connect the most important devices starting from the port with the lowest numbering. **Never connect devices that may exceed the PoE budget to PoE ports with the highest numbers. That will cause a run loop effect and the continuity of their work will not be maintained.**

### 5) Troubleshooting

- Power LED is turned off: check if the power cord is correctly plugged in and the plug is in the PoE switch. On top of that, make sure that input current parameters are in accordance with the specification. Try removing and inserting the plug again or use a different power cord that meets the rack PoE switch specification.
- LAN port's LED is turned off: check if the cable is not damaged and that the network configuration is set correctly. Then check whether all devices connected to the PoE switch are operational and properly configured.
- The dedicated LAN port's PoE LED is not lit orange: check that the end device supports active PoE mode - at least one of the standards: IEEE 802.3af or IEEE 802.3at. Make sure to use a certified category 5e Ethernet connection cable, built with 8 wires and made of pure copper (100% CU).
- Connected devices do not operate at distances up to 250 m: check if the toggle switch is set to „PoE Extend 250 m“. Then make sure that used connection cable (Ethernet) is certified to a minimum of 5e, is made of 8 wires and the conductor is made of pure copper (100% CU).
- Devices connected to the PoE ports operate at speeds of up to 10 Mb/s: check that the toggle switch is set to „PoE Extend 250 m“. If so, switch it to „Normal“.
- Devices connected to the PoE ports cannot communicate with each other except Uplink ports: check if the toggle switch is set to a „VLAN“ position. If yes, toggle it to the „Normal“ position.
- Connected products can communicate with each other even though the „VLAN“ function is active: check if there are devices connected to the Uplink ports, which redirect all traffic to all other ports. In this case, you must use managed switches with the appropriate features to restrict transmission.
- The PoE ports with the highest numbering are switched off or switched off and on (run loop effect):

1) When end devices that exceed the PoE budget are connected to the lowest numbering ports: this is normal switch behavior. If, for example, port 1 exceeds the PoE budget, the highest port will be turned off. When it is turned off, the total PoE load (reduced by the value from the last port) will be less than the available budget. That will cause the switch to turn on the previous port, which will cause the PoE budget to be exceeded again. The situation will stabilize when a load of port 1 will not exceed the PoE budget.

2) When end-devices that exceed the PoE budget are connected to the highest numbering ports: connect essential devices intended to operate 24/7 to the lowest ports to maintain continuity of operation, as described in point 1. Otherwise, the same device that causes the PoE budget to be exceeded and intended to operate continuously will be continuously turned off and on (run loop effect).

- Other: Verify if all the connected devices are in Full-Duplex mode and if the cable is min. UTP Cat.5e, ≤ 100m.

If you cannot fix the issues stated above by yourself or others that have not been mentioned occur, please contact your dealer for clarification and possible service.

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