Before you begin

Information

READ THIS FIRST!

Electronics, regardless of enclosure, are intended for use in a controlled indoor environment. Mains voltage should be disconnected during installation.

It is the installer's responsibility that the system is suitable for its intended use. Only authorized persons should install and maintain the system.

All information subject to change.

SUPPORT

Do you need help with installation or connection? Scan the QR code to read the entire manual.

You will find answers to many questions at: www.milleteknik.se go to your product to read more, download manuals and other product information.

Telephone: +46 31- 340 02 30, e-mail: support@milleteknik.se.

Support is open: Monday-Thursday 08:00-16:00, Fridays 08:00-15:00. Closed 11:30-13:15.

LINK TO THE LATEST INFORMATION

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

PoE

LINK TO TECHNICAL SPECIFICATIONS

HELP US MAKE BETTER PRODUCTS

With your help we can develop and produce better products, please fill in our form customer satisfaction survey.

Installation and commissioning

Instructions for installation and commissioning.

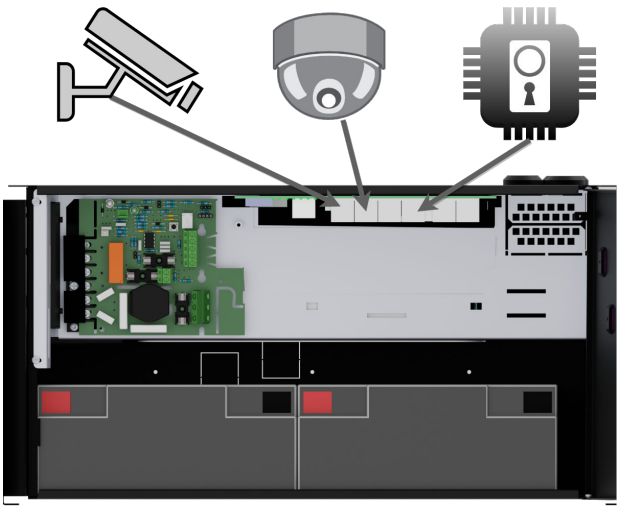
Instruction No: 350-261

About PoE from Milleteknik

The series is designed to power PoE devices such as access systems, surveillance cameras and other equipment that can be operated with Power over Ethernet.

PoE M-switch 4p FLX M, PoE M-switch 8p FLX M and PoE M-Switch 16p FLX M meet 802.3at type2 class 4. The PoE switch is managed, i.e. it is possible to control the switch via its software interface. The products have something we call "controlled charging", which is a safety function that means that batteries are not charged with more than 4.5 A. By controlling the charging of batteries, the lifespan of batteries is significantly extended. The product has 24 V battery voltage which is boosted up to 48 V to power the PoE switch. There is a load output on the motherboard that provides 24V, this allows the device to be used to power other applications such as door locks, etc on the one load output. It is important to accurately calculate the load so that the unit's specifications are not exceeded. Battery box can be connected for extended backup drive time.

PoE powers devices connected to the power supply



PoE can power, for example, surveillance cameras.

Connect external devices to be powered via PoE in PoE ports.

Connect other devices that do not need to be power supplied in LAN ports.

Component overview PoE FLX M

Figure 1. PoE M-switch 4p FLX M

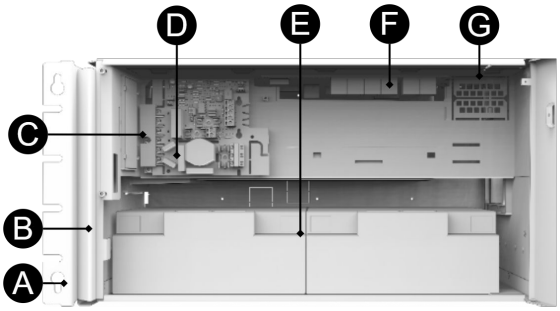
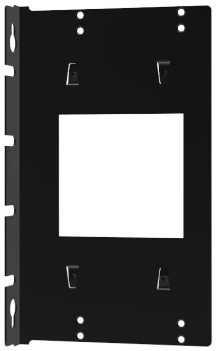


Table 1. Component overview

Symbol	Explanation
A	Brackets, reversible.
B	Casing in powder-coated sheet metal.
C	Power supply, (placed under the motherboard).
D	Motherboard.
E	Room for batteries.
F	Eight PoE ports are clustered together and two LAN ports are clustered together.
G	Cable entries.

Bracket for FLX M and FLX L

Bracket is reversible and can be mounted in two ways. It comes with brackets in to the device.



Batteries - placement and connection

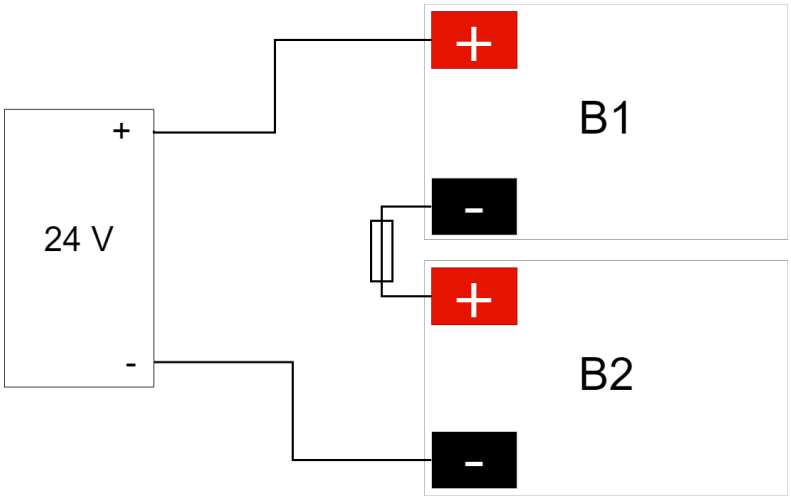
Connection of batteries in FLX S, FLX M and FLX L

Battery wiring is mounted on the circuit board upon delivery. Pictures below only show how to connect wiring.

1. Place the batteries in the cabinet with the battery terminals facing outwards.
2. Connect the battery cable. Red cable on + and black cable on -.

- If possible, disconnect mains voltage when replacing the battery.

Figure 2. Wiring diagram for batteries in battery backup



Connect the terminals correctly so that you do not damage the equipment.

Motherboard description

Connect in this order

To minimize the risk of short-circuit errors, connect the components to the motherboard in the following order.

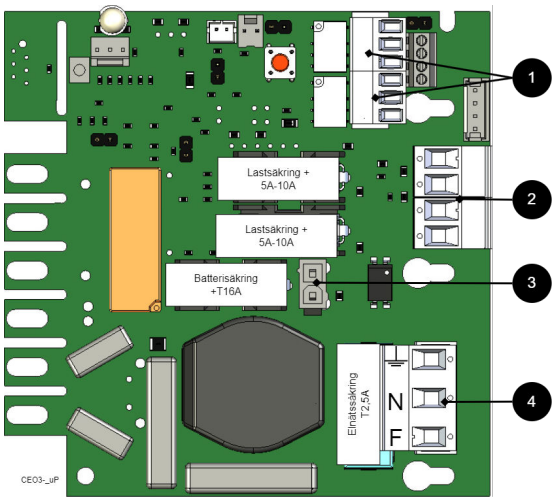
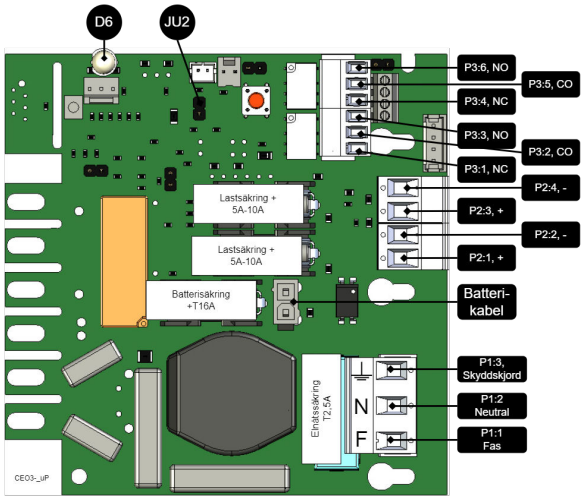


Table 2. Connect in this order

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

Figure 3. Description: CEO3 uP



On PCB	Explanation
D6	Indicator diode.
JU2	Jumper for alarm control. When the jumper is mounted, the alarm limit is lowered.
P1:1-3	Mains connection, F, N, PE.
P2:1-2	Load output, + / -.
P2:3-4	Load output, + / -.
P3:1-3	Alarm output, NC, CO, NO.
P3:4-6	Alarm output, NC, CO, NO.

Connect alarm on P3

Alarm is connected to terminal P3

Table 3. Connect alarm P3

P3:1-6	Explanation
Sum alarm	
P3:1	NC
P3:2	CO
P3:3	NO
Sum-alarm*	
P3:4	NC
P3:5	CO
P3:6	NO

Total alarm: Broken fuse on load, broken fuse from external distribution board, broken battery fuse, low battery voltage in battery operation, batteries not connected, overvoltage.

Connect load

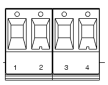


Table 4. Load connections

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 the rating plate 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

Secure L and N with cable ties.

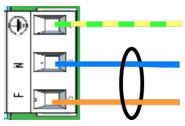
IMPORTANT

Protective earth (PE) must be connected to the PE terminal on the motherboard. The motherboard is grounded via its mounting points in the enclosure, ensuring proper potential equalization between PCB and enclosure. Also the cover is grounded through ground cable/earth braid between cover and enclosure to maintain continuity and EMC

The protective earth (PE) must be connected to the PE terminal on the motherboard. The motherboard is grounded via its mounting points in the enclosure, ensuring correct equipotential bonding between the circuit board and the enclosure. The cover is also grounded via a grounding cable / grounding braid between the cover and the enclosure to maintain continuity and EMC function.

Check that the marking on the circuit board matches the wiring order on the terminal block.

Figure 4. Mains connection is made to the terminal block on the motherboard.



Connect the mains cable to the terminal block before it is re-inserted into the motherboard. Secure L (F in picture) and N with cable ties for electrical safety.

Table 5. Electrical network connections

Letter	Explanation
L	Fas
N	Neutral
PE	

Control alarm limit

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

Table 6. Low battery voltage alarm limit

Low battery voltage alarm limit	JU2 with jumper[a.]	JU2 without jumper
24 V	24.0V	26.5V

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

Fuses

Table 7. Fuses.

Unit	Fuse	Type	Explanation
All units	F1	T2,5A	Mains fuse
	F2, F6	T10A	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.

The differences between PoE switches

Product	PoE switch installed	Can additional PoE switches be installed?
PoE M-switch 4p FLX M	A four 4 port PoE Switch	No .

Commissioning - how to start the unit

Connect in this order

To minimize the risk of short-circuit errors, connect the components to the motherboard in the following order.

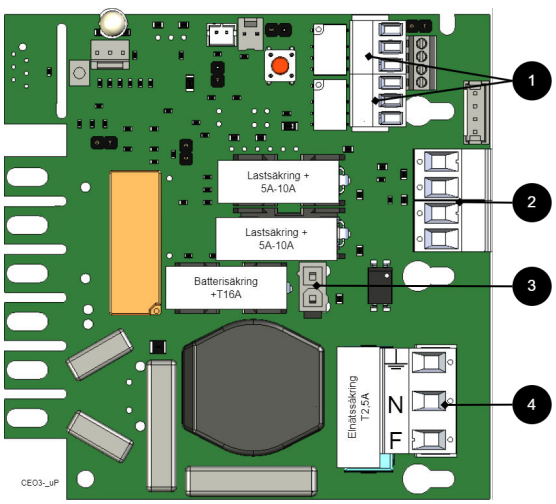


Table 8. Connect in this order

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

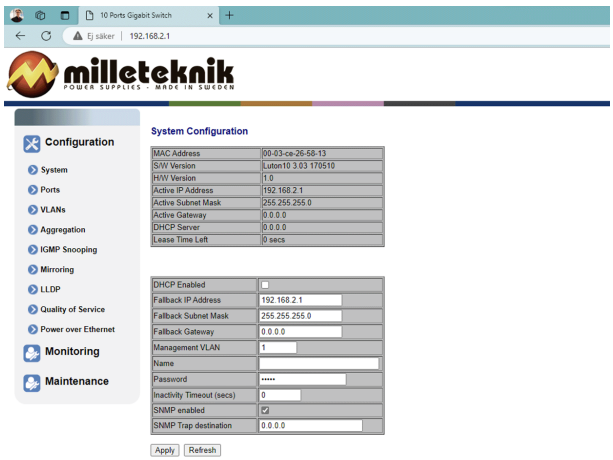
1. Connect batteries.
   - Connect fuses.
2. Plug in PoE and other loads.
3. Screw the mains cable into the terminal and attach the terminal to the motherboard.
   - Switch on mains voltage.

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 for the batteries to be fully charged.

How the PoE switch software is accessed

How the software is accessed in the PoE Switch



This section shows how to log in to the switch's configuration web page.

To configure the software in the switch, the correct IP address needs to be set on the computer.

Access to the switch's software is through a browser, (such as: Chrome, Edge, Firefox, etc.).

Follow the steps to access the switch's settings.

NOTE

The settings shown are settings for PC, (Windows 7 - Windows 11). Windows and names may vary between different versions of Windows. Unfortunately, we cannot provide support for settings of your computer.

NOTE

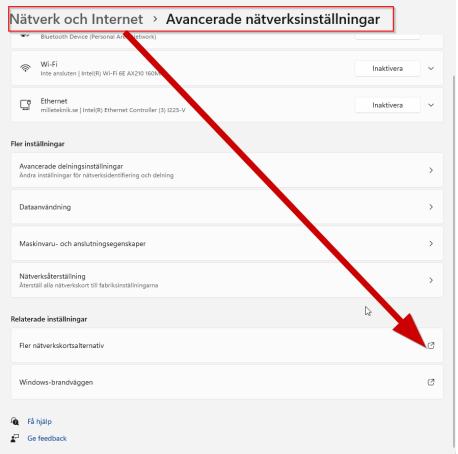
IP address of the switch (factory setting): **192.168.2.1**

Password (factory setting): **admin**

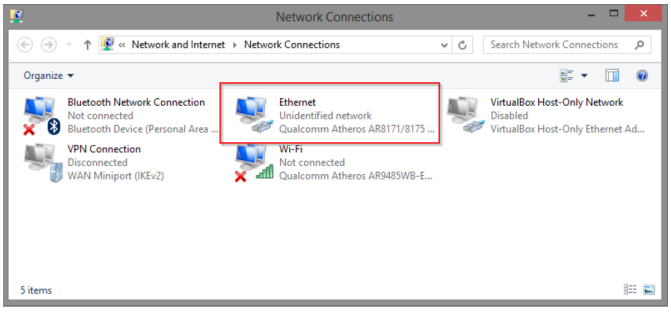
NOTICE

The address of the PoE switch is: **192.168.2.1** and username and password are: **admin/admin** The IP address in the switch is static (fixed) and therefore the computer's IP address and subnet mask must be static.

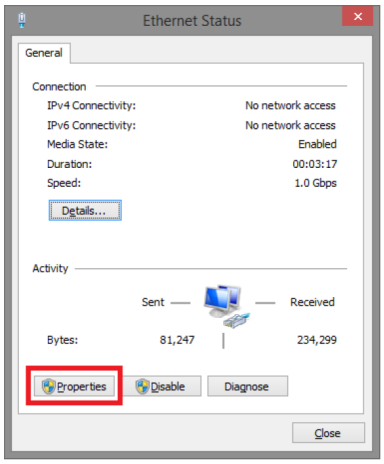
1. Open settings and go to **Network and Internet** -> **Advanced network settings**. Open **more network card options**.



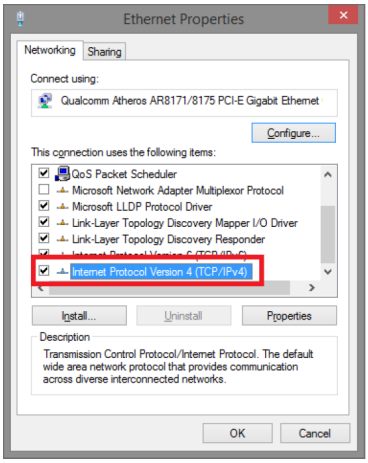
2. A Network Connections window will appear showing all available network connections on the computer. Double-click the network connection you use to connect to the switch.



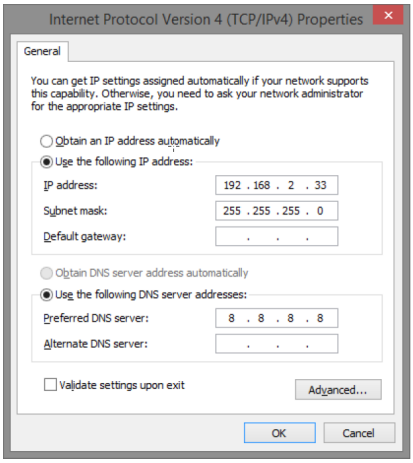
3. Ethernet status window appears. Click the button **Characteristics** as shown in the figure below.



4. Double-click: Internet Protocol Version 4 (TCP / IPv4).



5. Set the computer's IP address and subnet mask as shown in the figure below. By default, the product's **IP address be 192.168.2.1.** You can set any IP address as long as it is not the same as your switch's IP address and is in the same network segment as your switch's IP address. Press on **OK** to apply the TCP/IPv4 settings you just made. Now you can connect to your switch using a web browser (Chrome, Edge or Firefox).



6. Connect an RJ-45 cable and connect to the PoE switch.

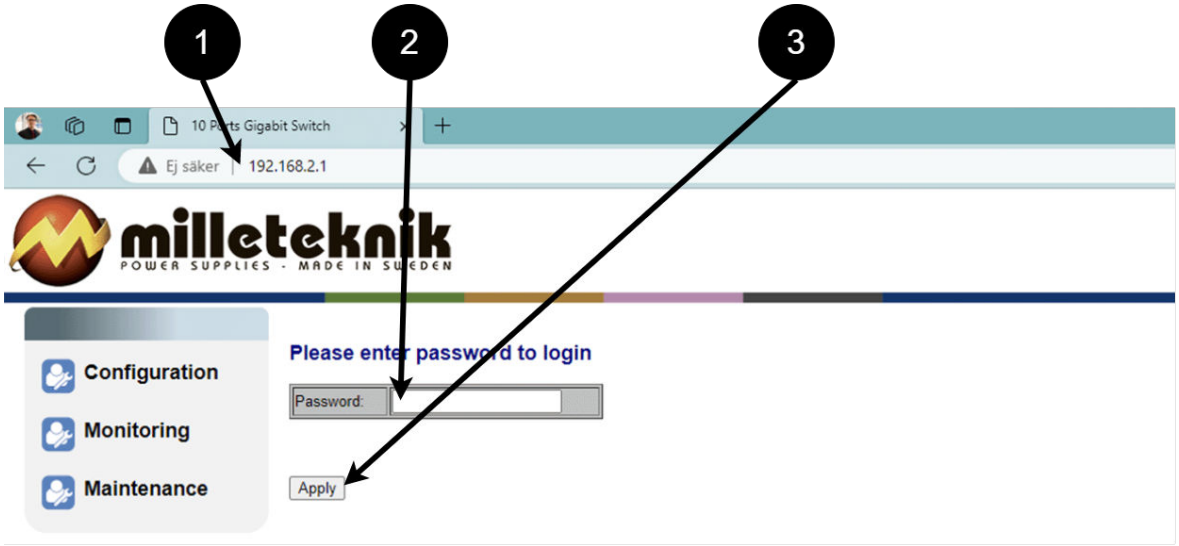
Log in to the PoE switch

NOTE
IP address of the switch (factory setting): **192.168.2.1**

Password (factory setting): **admin**

NOTE
If you get a warning that the page is not secure/the connection is not private, click "advanced" and then "continue".

1. Start the browser on your computer.
2. Login to PoE switch.



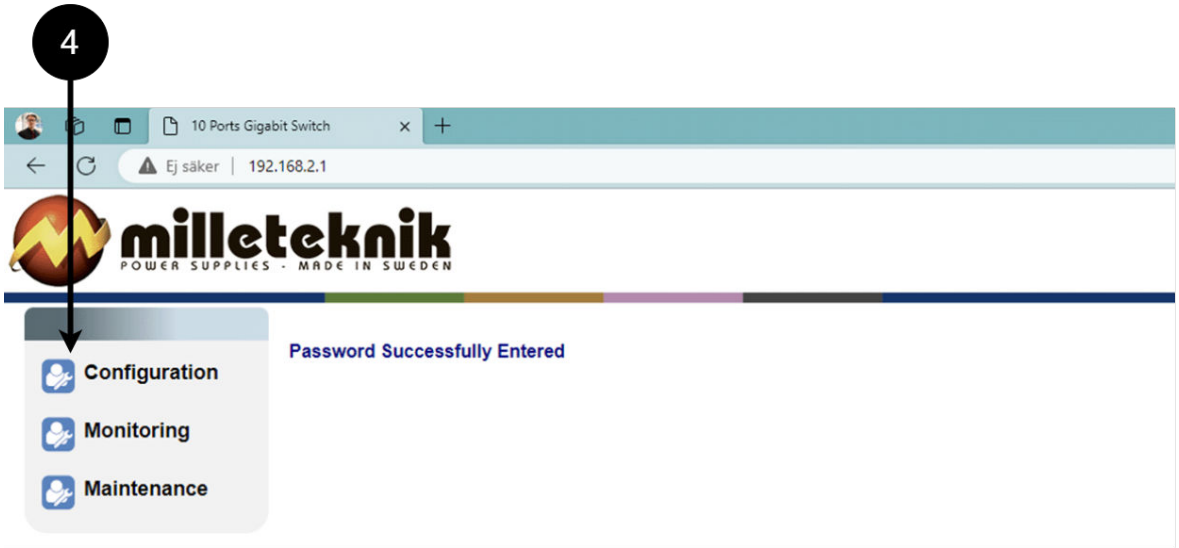


Table 9. Log in to the switch.

Number	Explanation
1	IP address of the PoE switch: 192.168.2.1
2	Password: admin
3	Apply = Ok
4	Menu in the PoE switch

Configuration

SYSTEM, CONFIGURATION

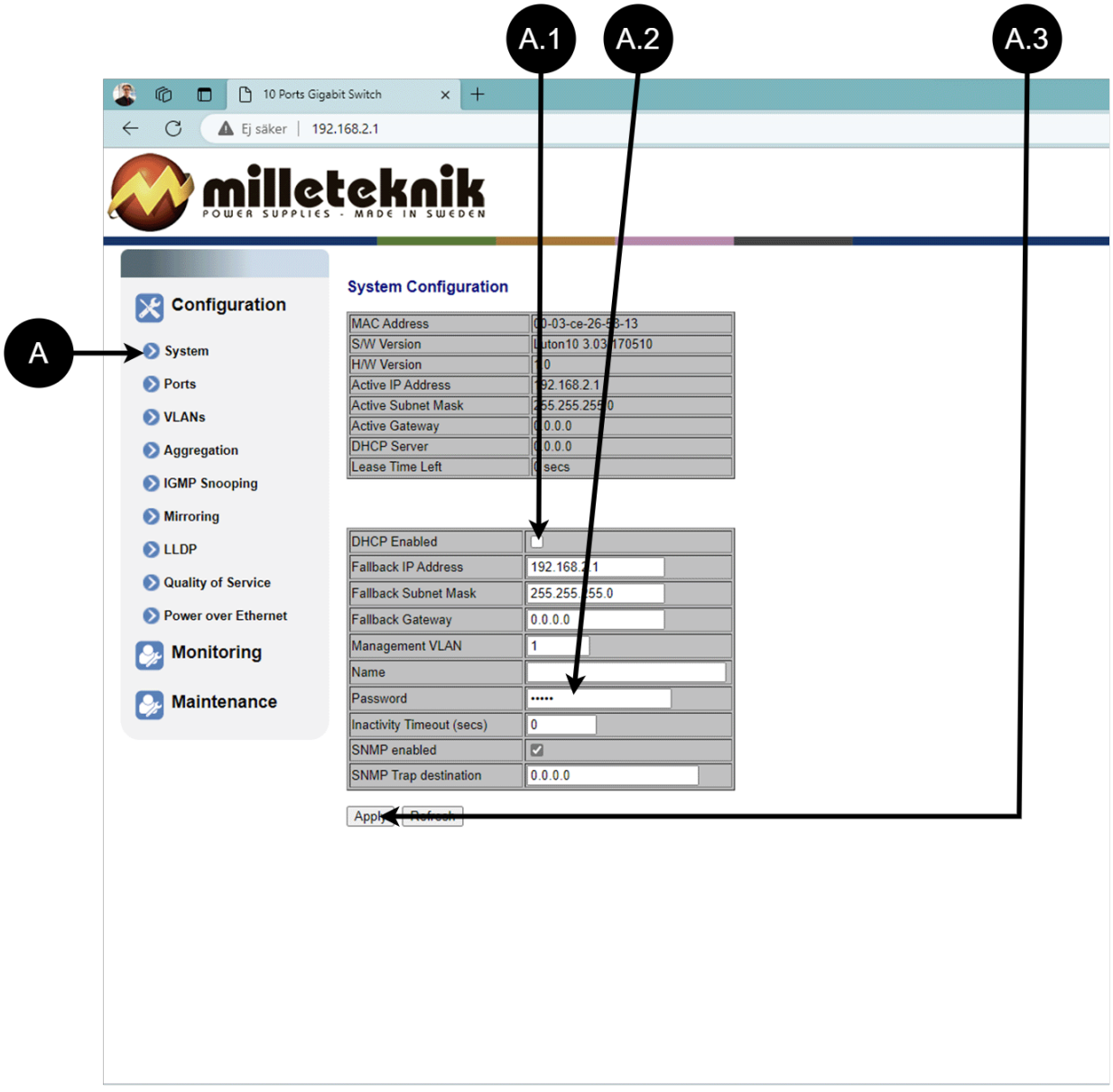


Table 10. System, configuration.

Letter, number	Explanation
A	PoE switch system configuration page
A.1	Tick here if you are going to use DHCP, see warning below.
A.2	Changes the factory default password, (admin).
A.3	If you have made any changes, you need to click "Apply" to save the changes.

WARNING

The settings on this page normally do not need to be changed. Only change the settings if you absolutely know what you are doing.

Factory reset the PoE device if it does not behave as expected after adjusting settings on this page.

PORTS, CONFIGURATION

WARNING

The settings on this page normally do not need to be changed. Only change the settings if you absolutely know what you are doing.

Factory reset the PoE device if it does not behave as expected after adjusting settings on this page.

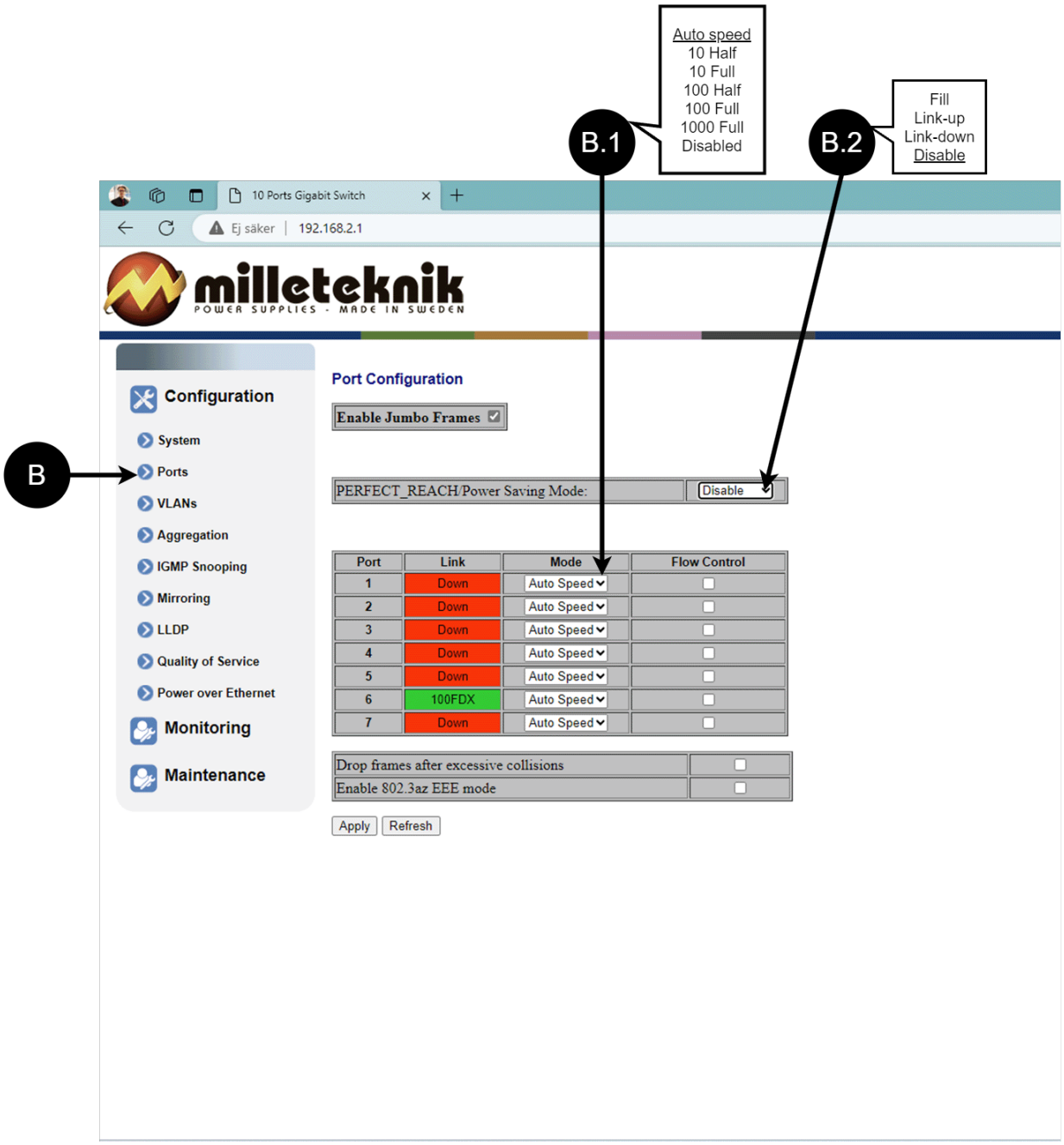


Table 11. Ports, configuration.

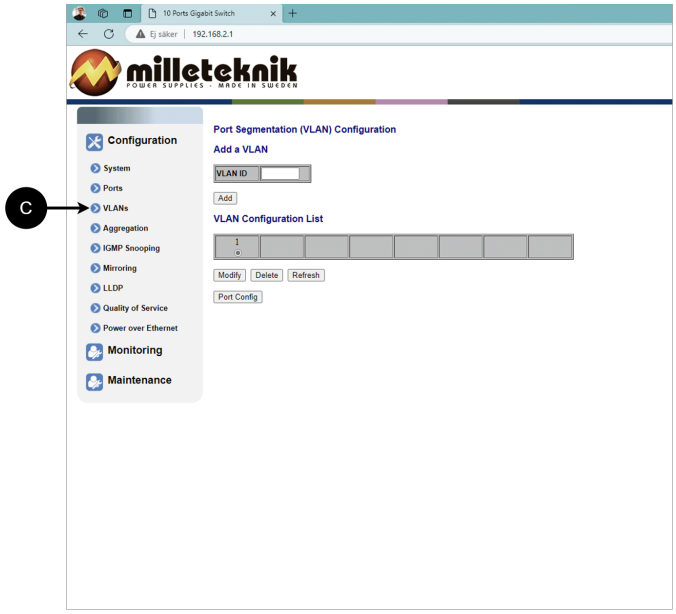
Letter, number	Explanation
B	Gates
B.1	This setting normally does not need to be changed. Select the speed of the PoE switch's ports.
B.2	This setting normally does not need to be changed.

VLAN CONFIGURATION

WARNING

The settings on this page normally do not need to be changed. Only change the settings if you absolutely know what you are doing.

Factory reset the PoE device if it does not behave as expected after adjusting settings on this page.



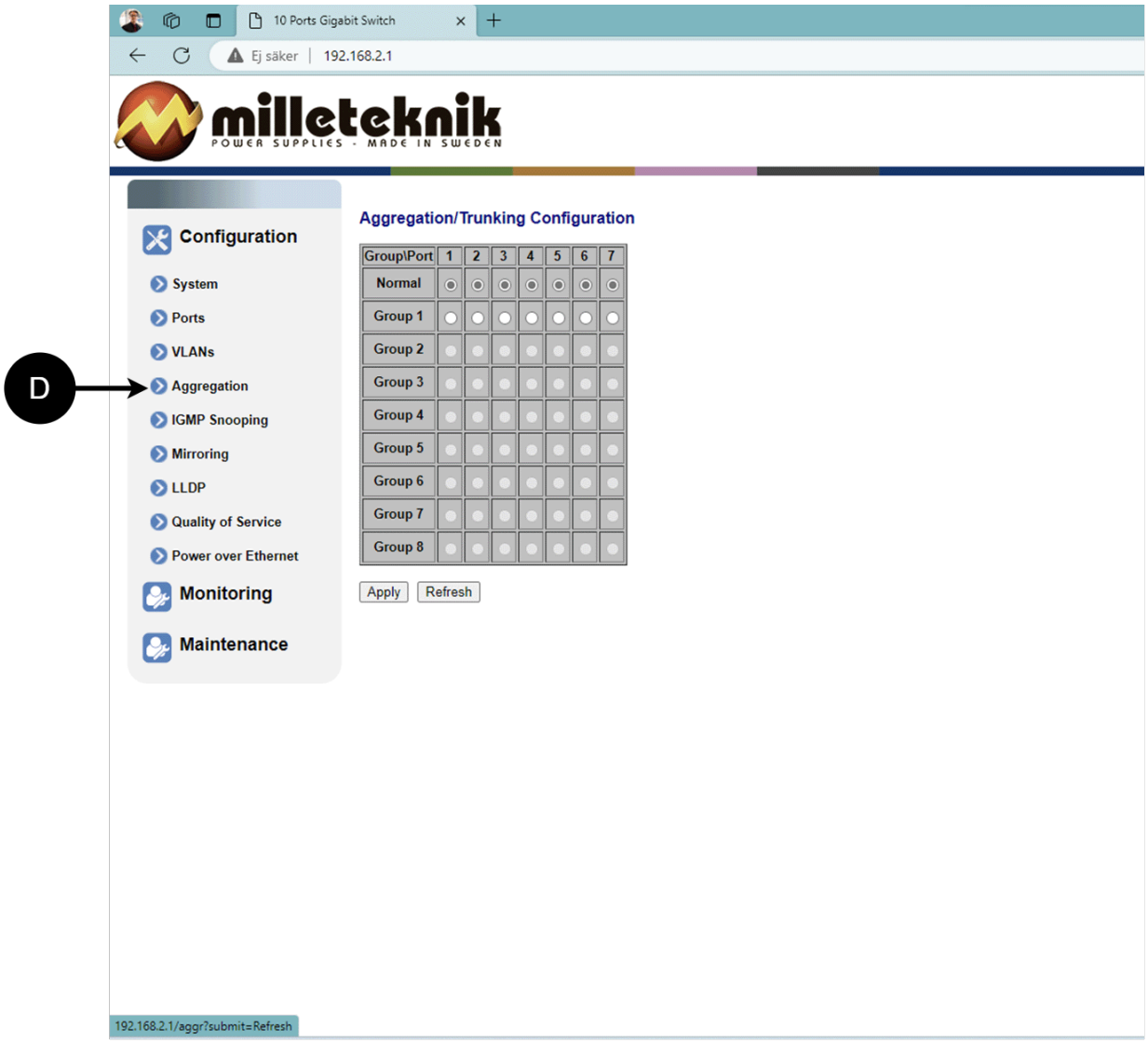
C: Configuration of Virtual LAN.

AGGREGATION, CONFIGURATION

WARNING

The settings on this page normally do not need to be changed. Only change the settings if you absolutely know what you are doing.

Factory reset the PoE device if it does not behave as expected after adjusting settings on this page.



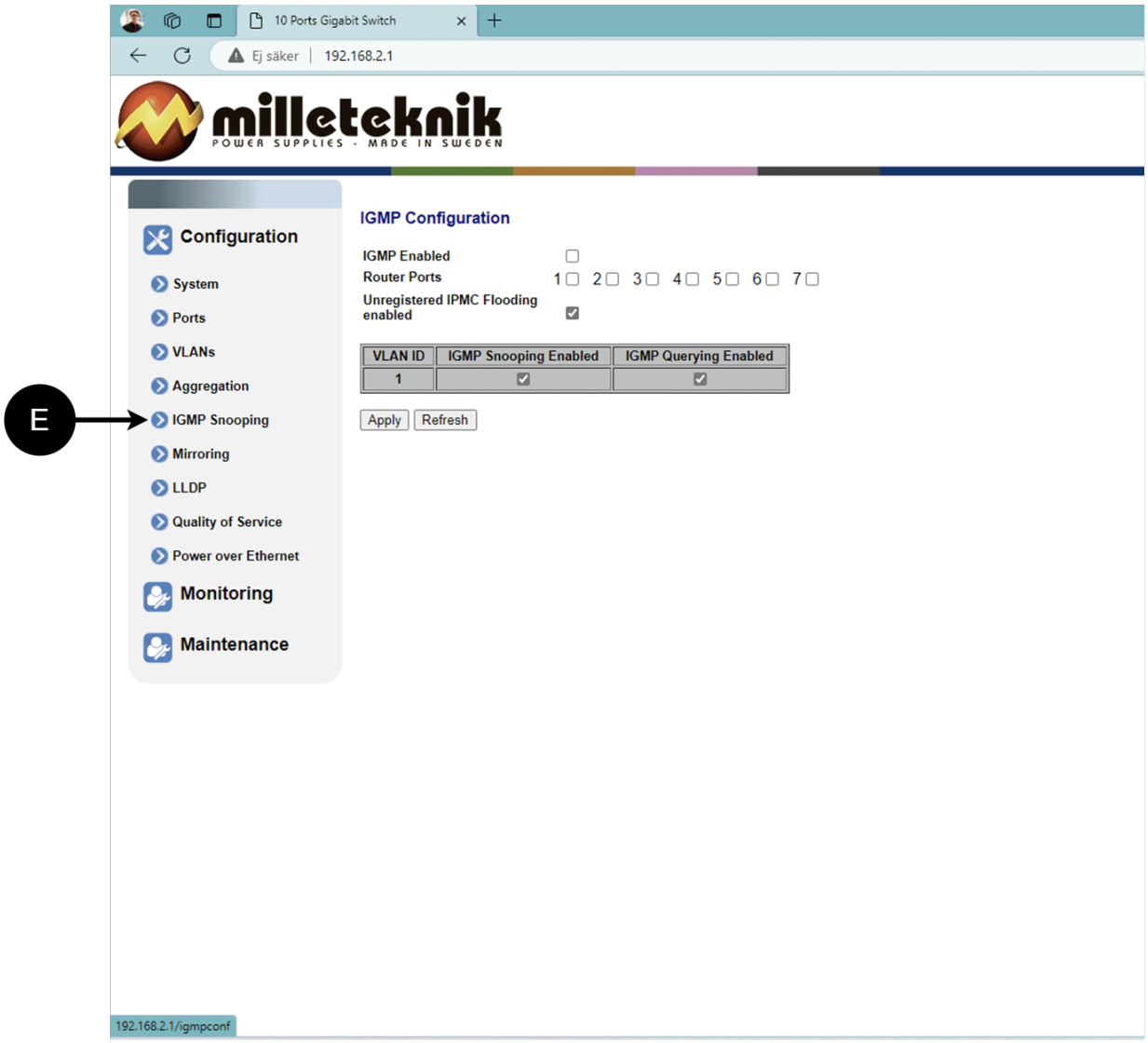
D: Load balancing between the ports.

IGMP SNOOPING, CONFIGURATION

WARNING

The settings on this page normally do not need to be changed. Only change the settings if you absolutely know what you are doing.

Factory reset the PoE device if it does not behave as expected after adjusting settings on this page.



E: Switch that controls reception.

MIRRORING, CONFIGURATION

WARNING

The settings on this page normally do not need to be changed. Only change the settings if you absolutely know what you are doing.

Factory reset the PoE device if it does not behave as expected after adjusting settings on this page.

F: Mirroring of ports.

LLDP CONFIGURATION

WARNING

The settings on this page normally do not need to be changed. Only change the settings if you absolutely know what you are doing.

Factory reset the PoE device if it does not behave as expected after adjusting settings on this page.

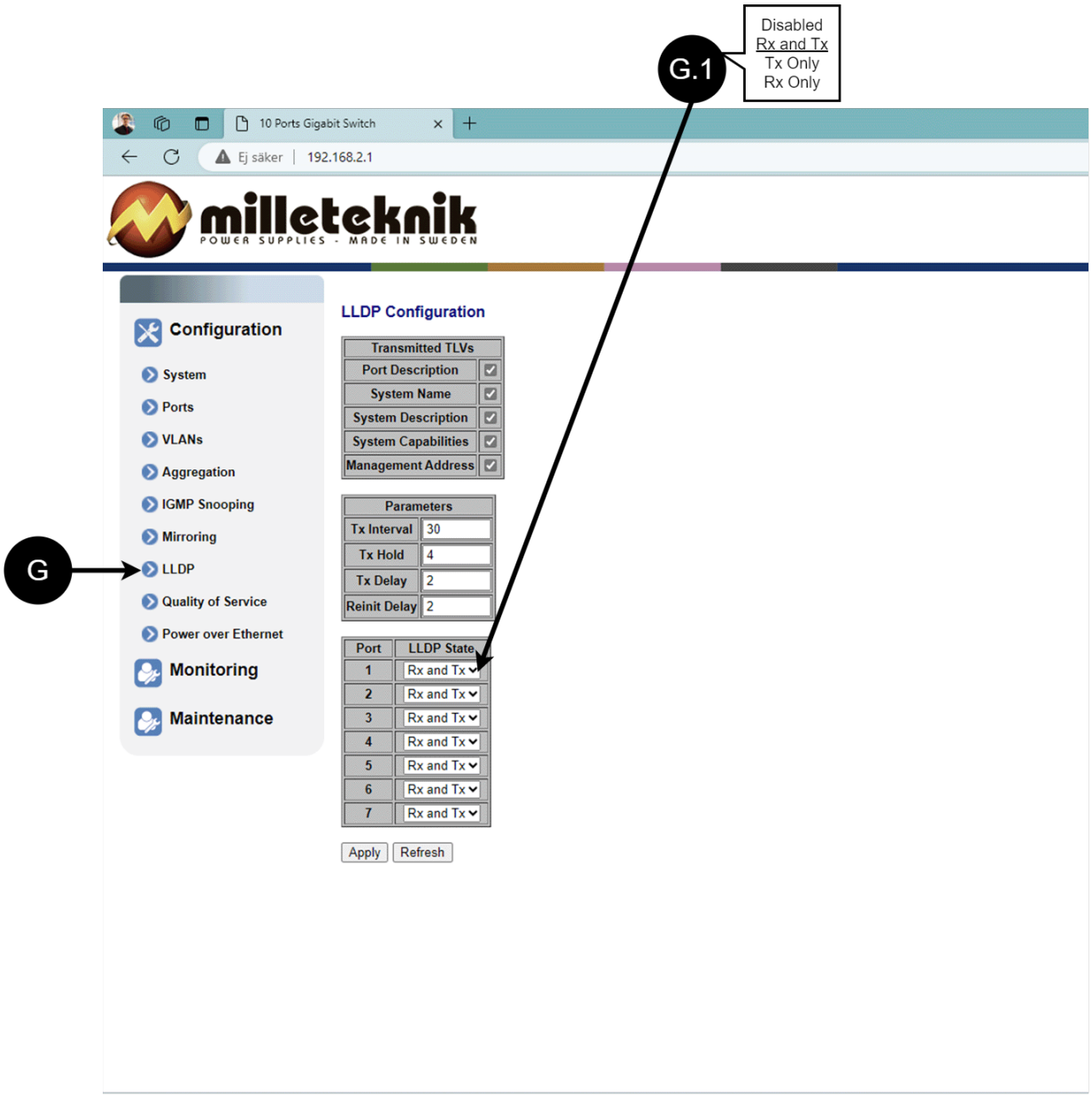


Table 12. LLDP configuration.

Letter, number	Explanation
G	LLDP stands for "Link Layer Discovery Protocol", which is a network protocol standard used to discover and communicate information about network devices connected to the same Ethernet network. The protocol allows devices such as switches and routers to send and receive messages containing information about the device's identification, capabilities, and connection topology.
G.1	RX and TX are abbreviations used in electronics, communications, and computer networking to indicate the direction of data flow between devices. RX: The abbreviation "RX" stands for "Receive" or "Reception". It indicates that the device is receiving data or signals from another device. When a device has an RX input, it means that it is designed to receive data or information from a transmitting device. TX: The abbreviation "TX" stands for "Transmit" or "Transmission". It indicates that the device is transmitting data or signals to another device. If a device has a TX output, it means that it is designed to transmit data or information to a receiving device. These abbreviations are especially common when it comes to data communication, such as in the context of network cables where there are specific RX and TX wires that allow for two-way communication between devices.

QOS, CONFIGURATION

WARNING

The settings on this page normally do not need to be changed. Only change the settings if you absolutely know what you are doing.

Factory reset the PoE device if it does not behave as expected after adjusting settings on this page.

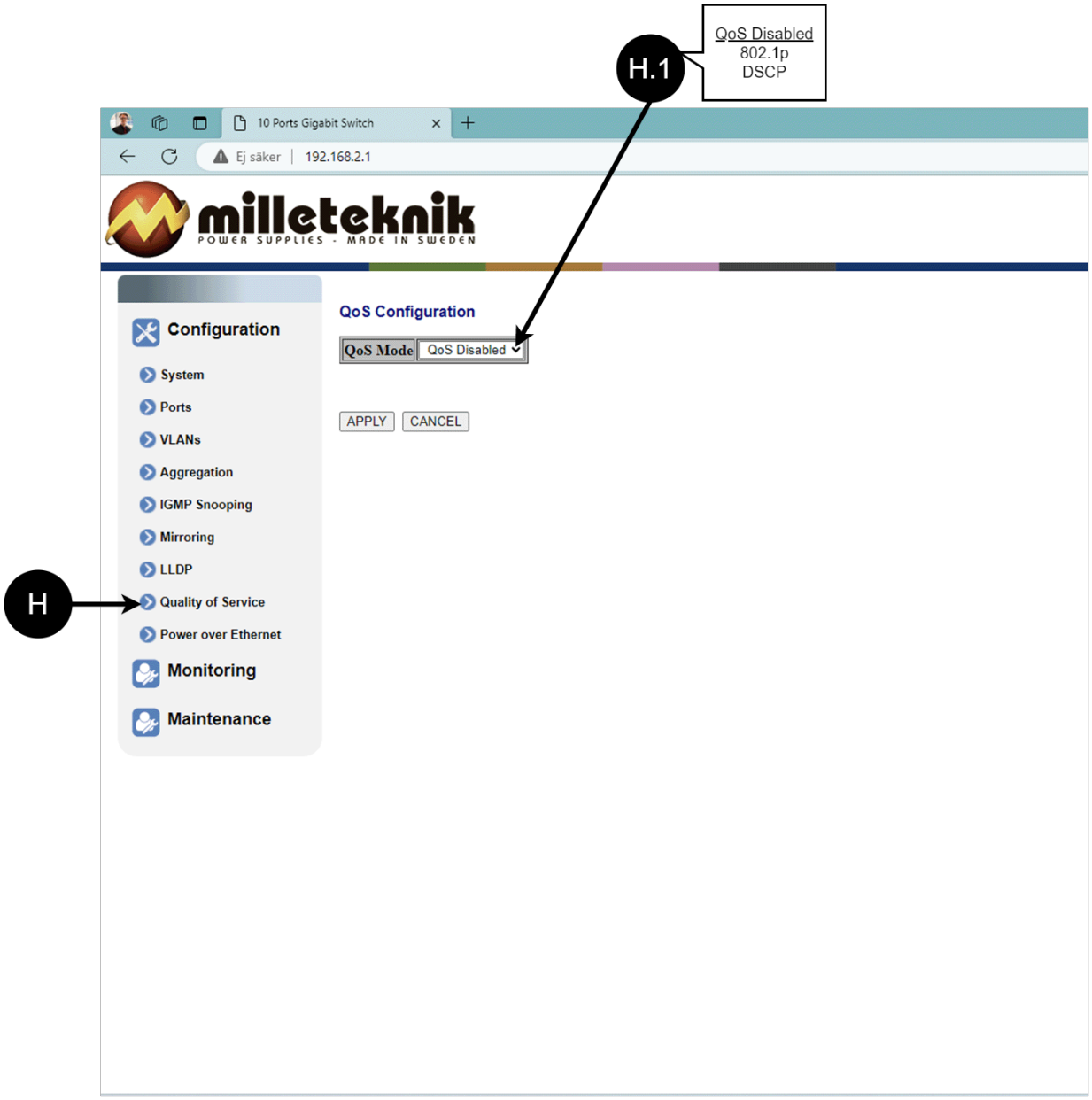


Table 13. QoS, configuration.

Letter, number	Explanation
H	QoS gives different network traffic different priority, helping to ensure that important services are delivered with sufficient bandwidth and minimal delay even when the network is under load.

Letter, number	Explanation
H.1	Sets whether QoS is active.

POE, CONFIGURATION

> **WARNING**
> The settings on this page normally do not need to be changed. Only change the settings if you absolutely know what you are doing.
>
> Factory reset the PoE device if it does not behave as expected after adjusting settings on this page.

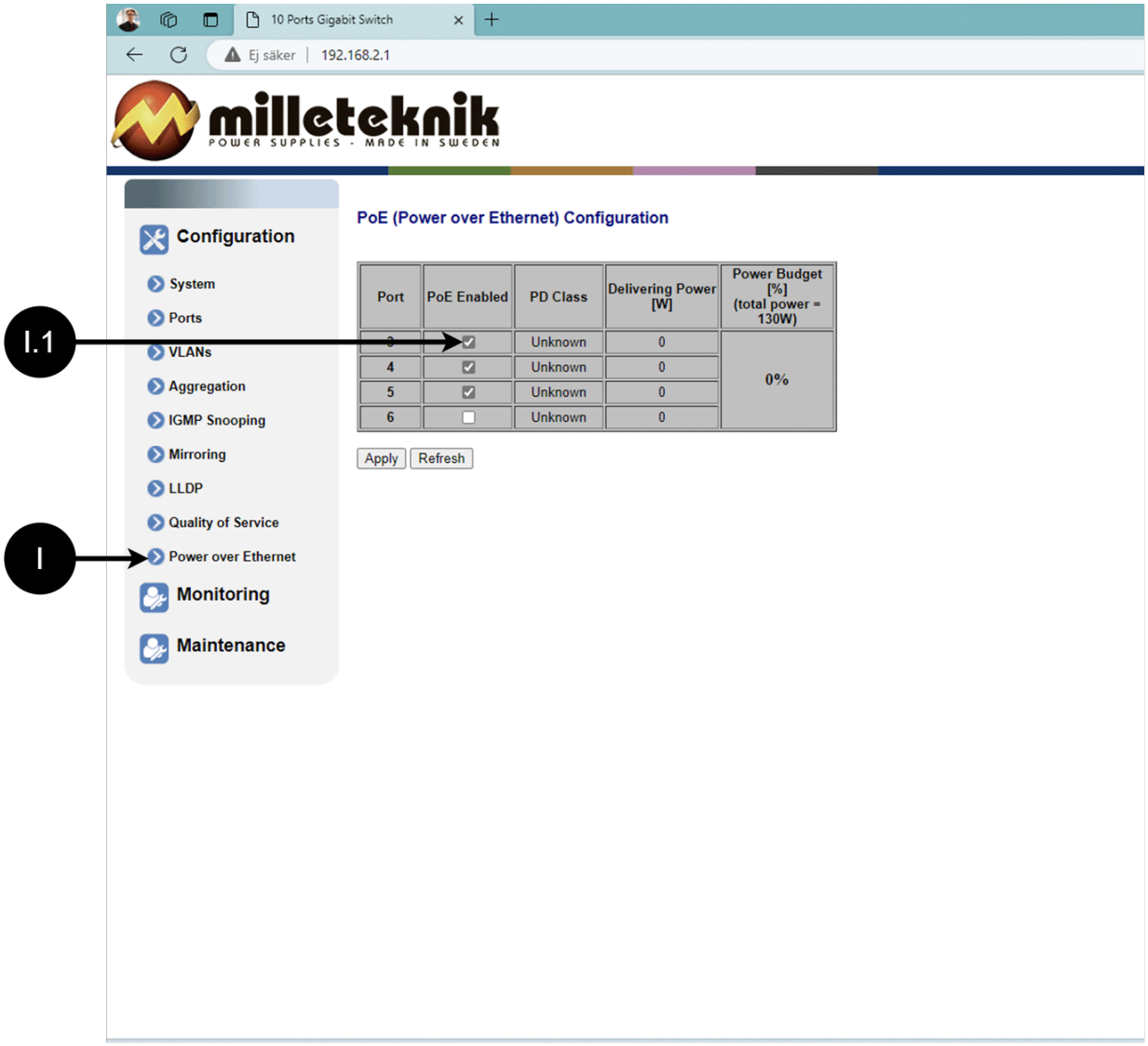


Table 14. PoE, configuration

Letter, number	Explanation
I	Power over Ethernet
I.1	Turns PoE function/port on or off. Remember to press "Apply" to save changes.

Monitoring

STATISTICS, OVERVIEW

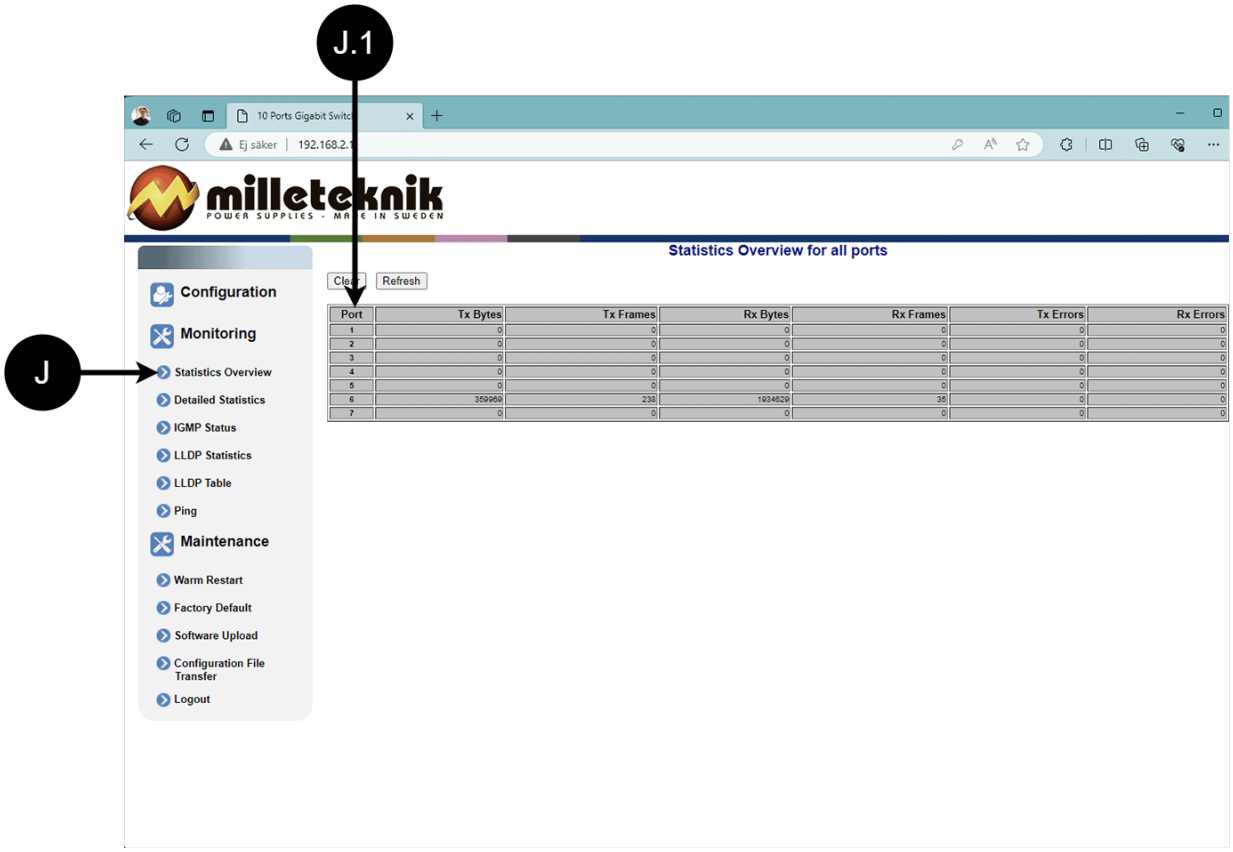


Table 15. Statistics, overview.

Letter, number	Explanation
J	Statistics, overview
J.1	Traffic per port.

STATISTICS, DETAILED

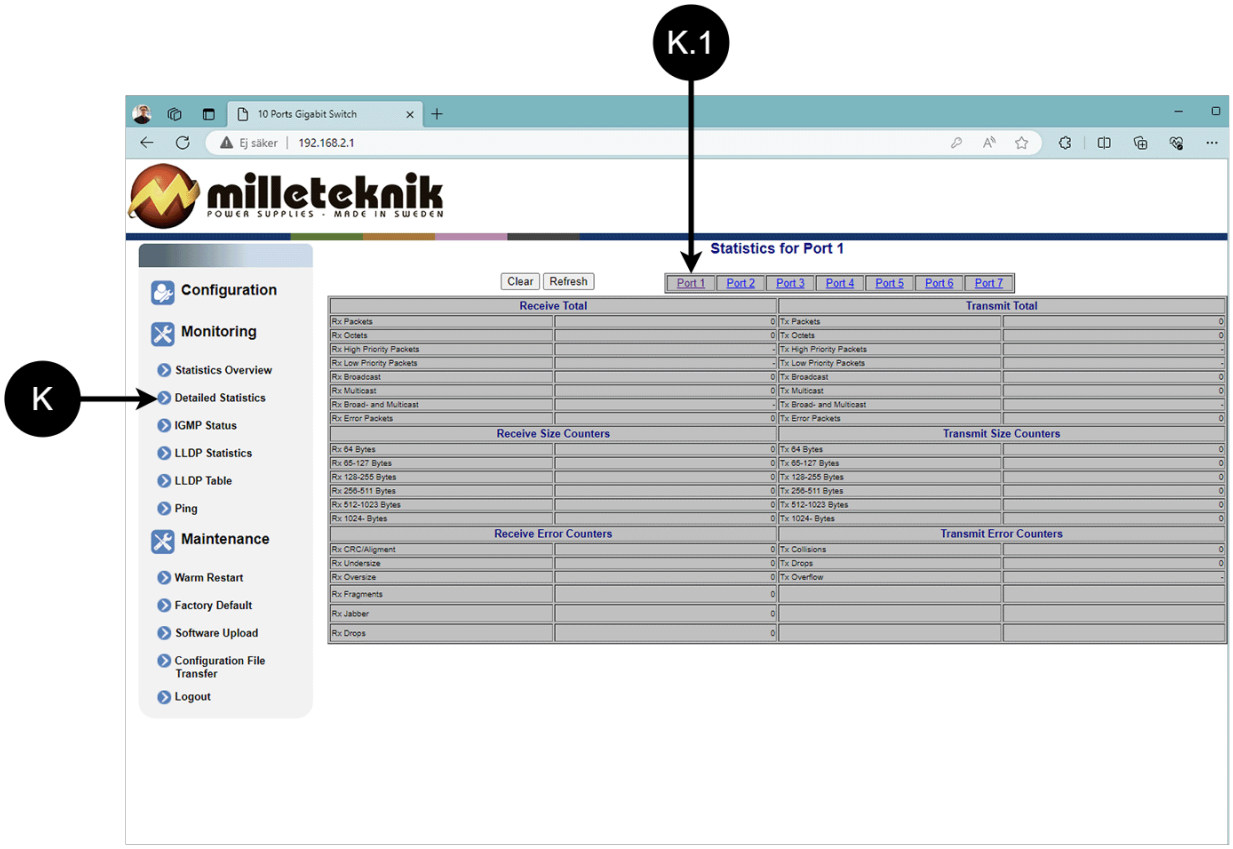


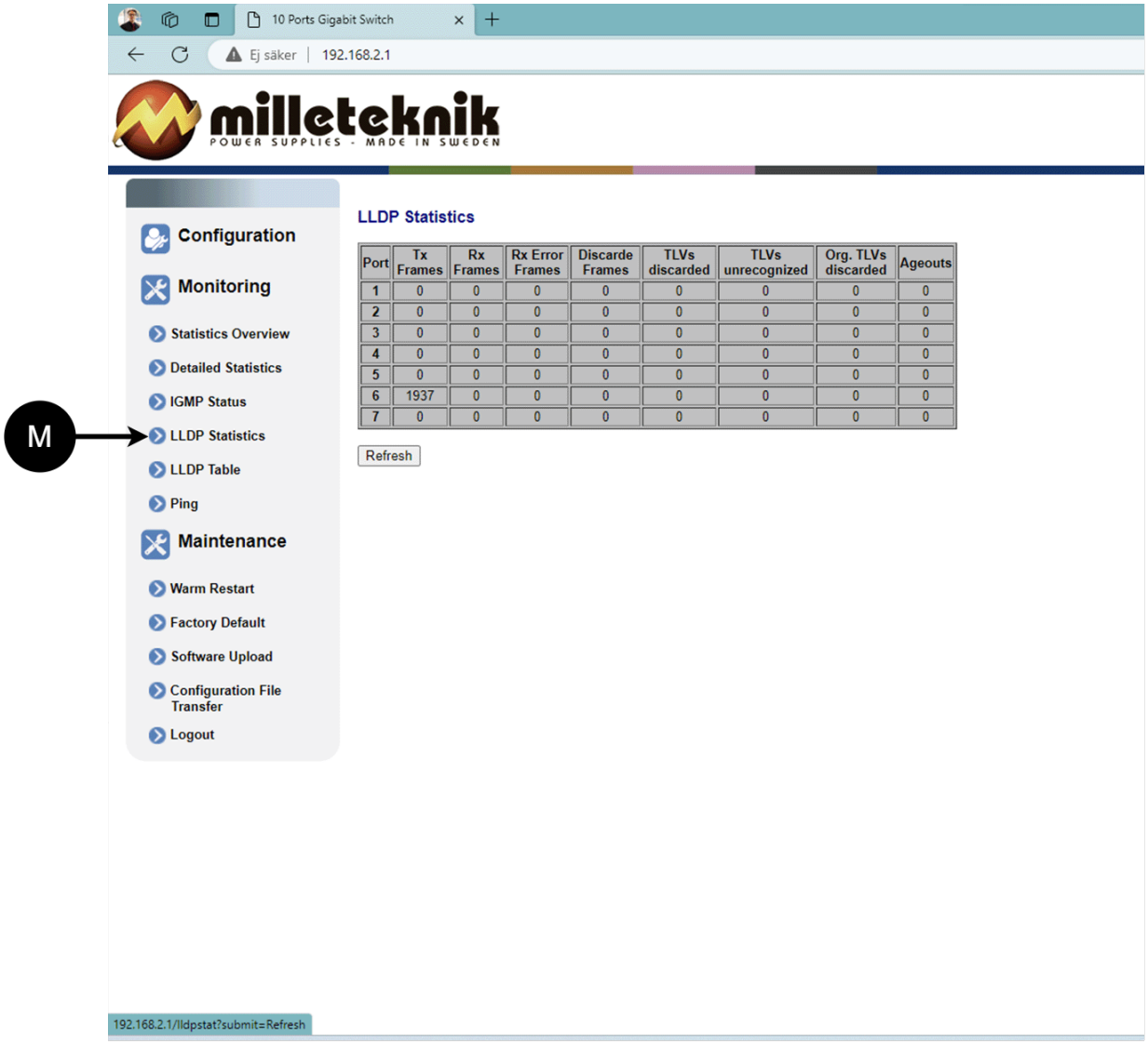
Table 16. Statistics, detailed.

Letter, number	Explanation
K	Detailed statistics
K.1	Select the port for which you want statistics.

IGMP STATUS

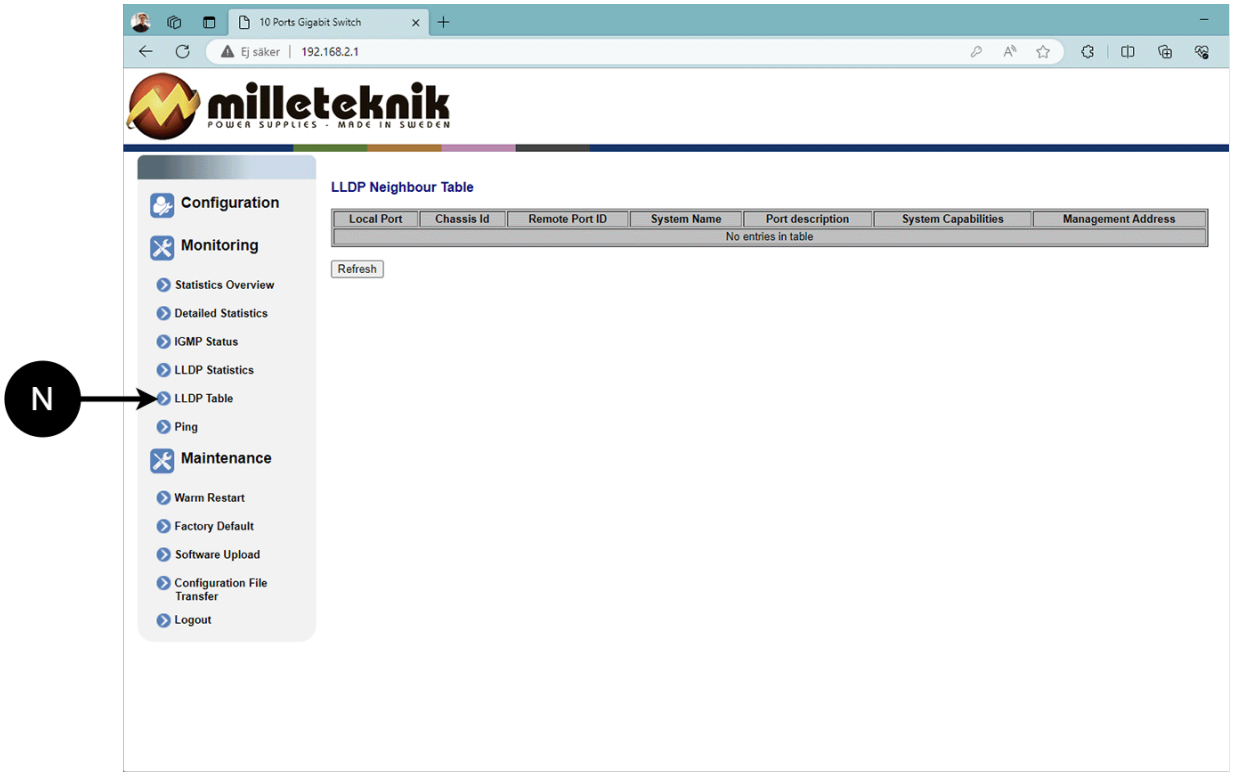
L: Status of IGMP

LLDP STATISTICS



M: LLDP statistics

LLDP TABLE



N: LLDP overview.

PING

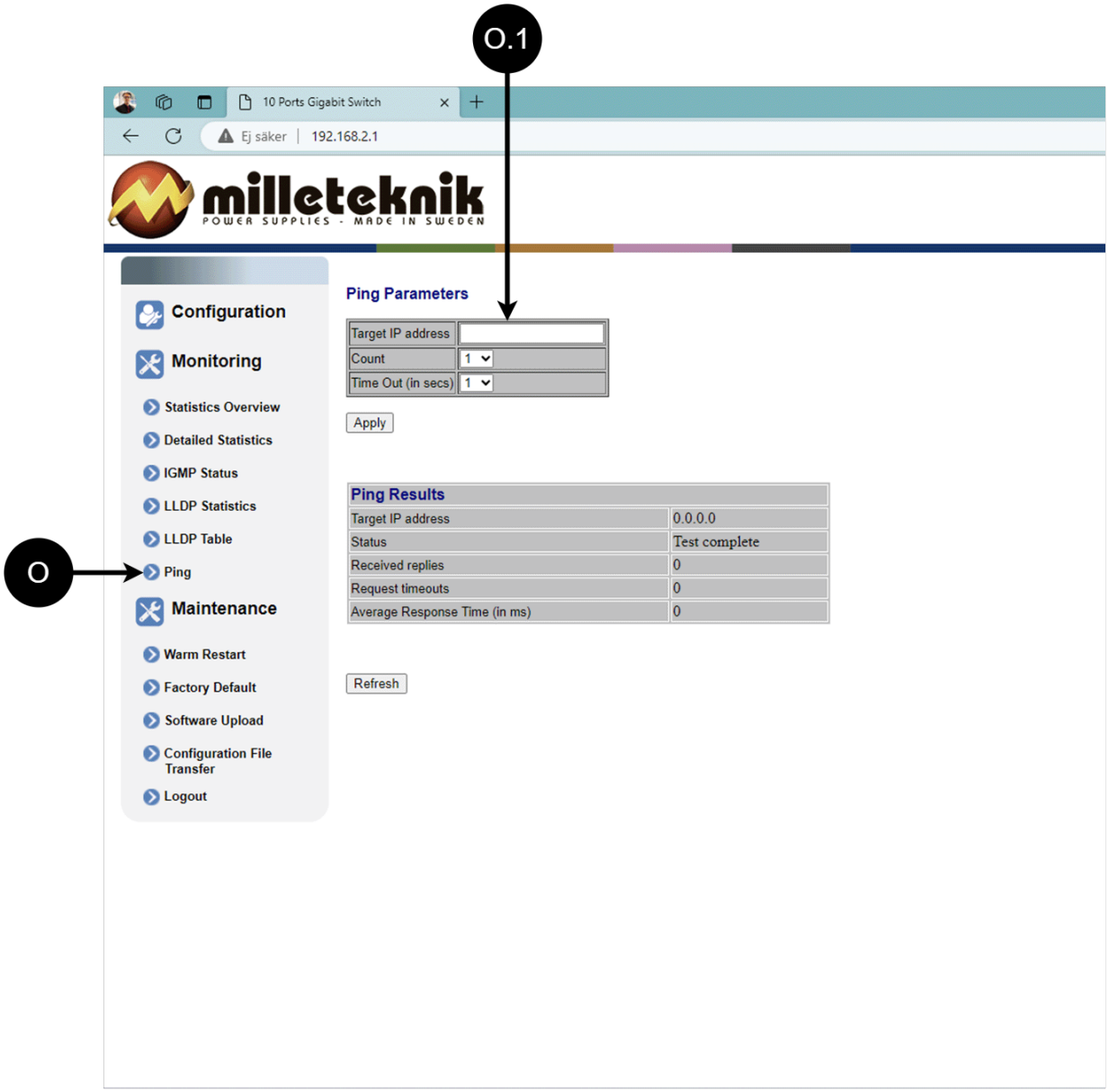


Table 17. Ping.

Letter, number	Explanation
O	Ping
[sv] O.1	Input address to test the connection and response time.

Maintenance

REBOOT

WARNING

Restart is done by PoE switch, battery backup is not restarted. Upon reboot, connected devices will lose connection. Alarm can be set to battery backup, but it disappears when the PoE switch is back on.

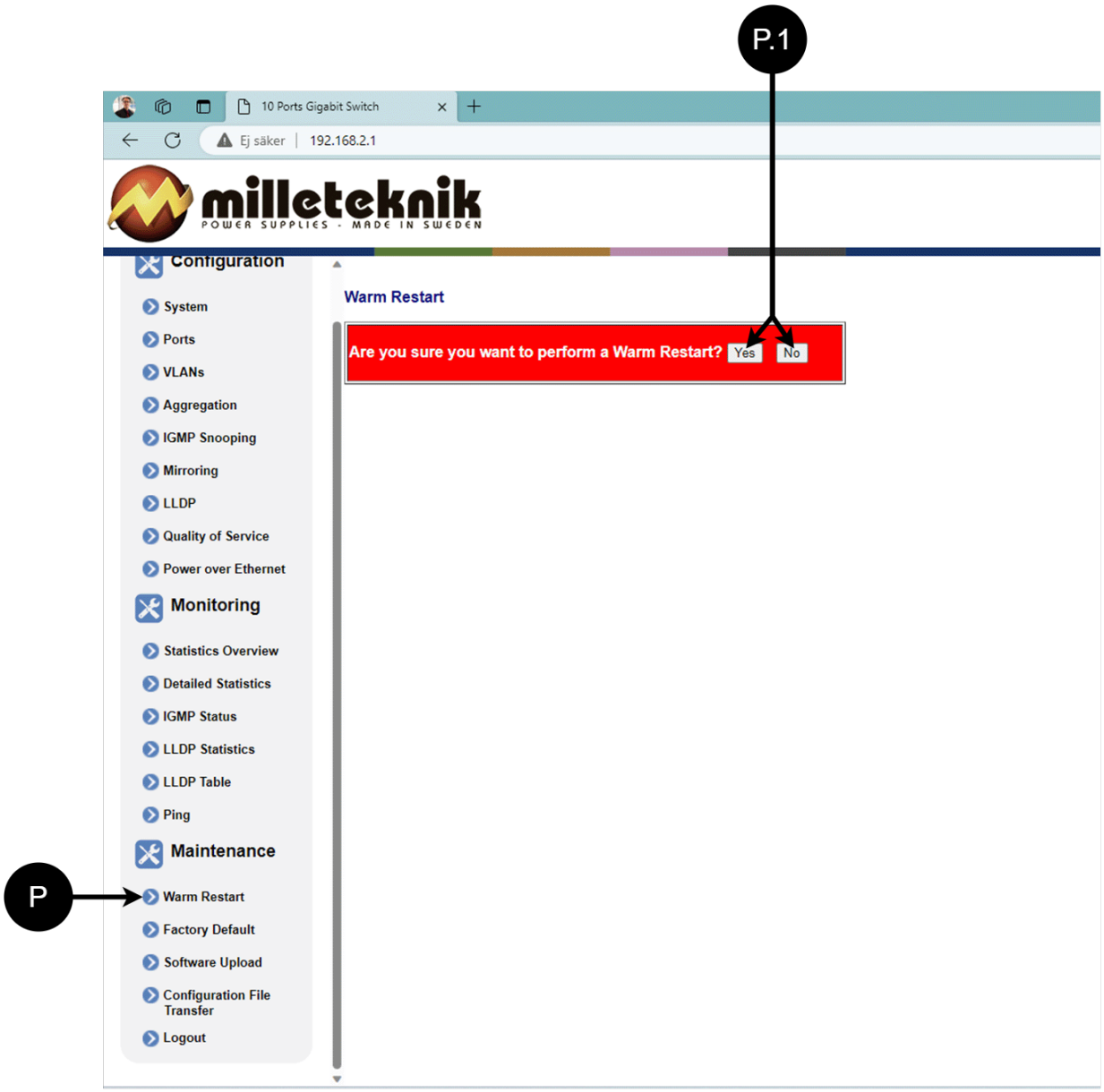


Table 18. Restarting the PoE switch.

Letter, number	Explanation
P	Rebooting the PoE switch.
P.1	Select "Yes" to reboot the switch.

FACTORY RESET

WARNING

Factory reset is done by PoE switch. Battery backup is not restored. On reset, connected devices will lose connection. Alarm can be set to battery backup, but it disappears when the PoE switch is back on.

Factory reset of the switch can only be done from the software's (this) interface.

Recommendation: Keep IP address 192.168.2.1 and note password.

IMPORTANT

During a factory reset, all settings, including IP settings, are lost. Save configuration before factory reset. See Upload new software [30]

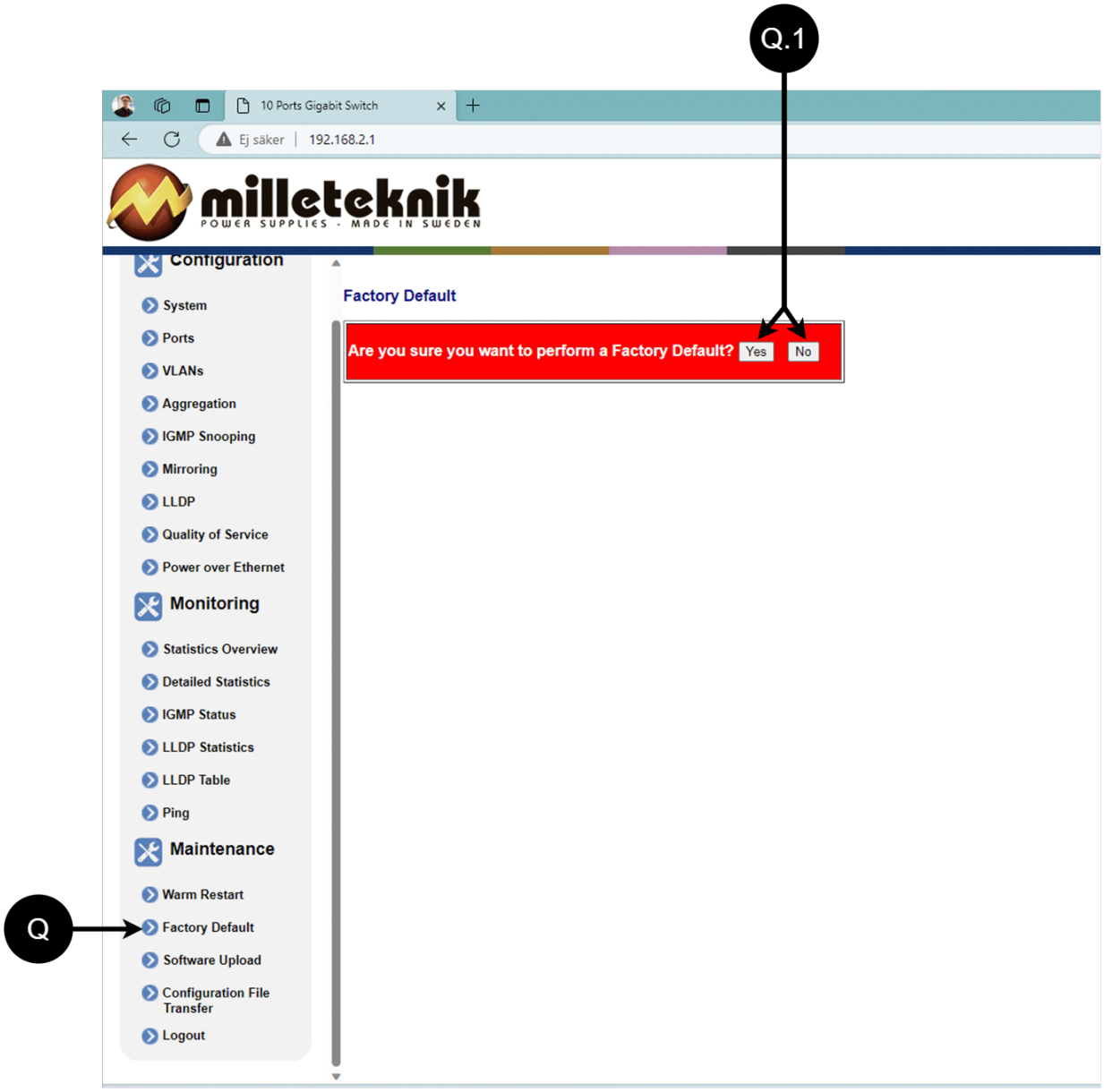


Table 19. PoE switch factory reset.

Letter, number	Explanation
Q	Factory reset the PoE switch.
Q.1	Select "Yes" to factory reset the PoE switch.

UPLOAD NEW SOFTWARE

WARNING

Only use software you received from Milleteknik's support. Milleteknik assumes no responsibility for software or consequences such as damage to the device or peripheral equipment or other damage that may arise from uploading unapproved software.

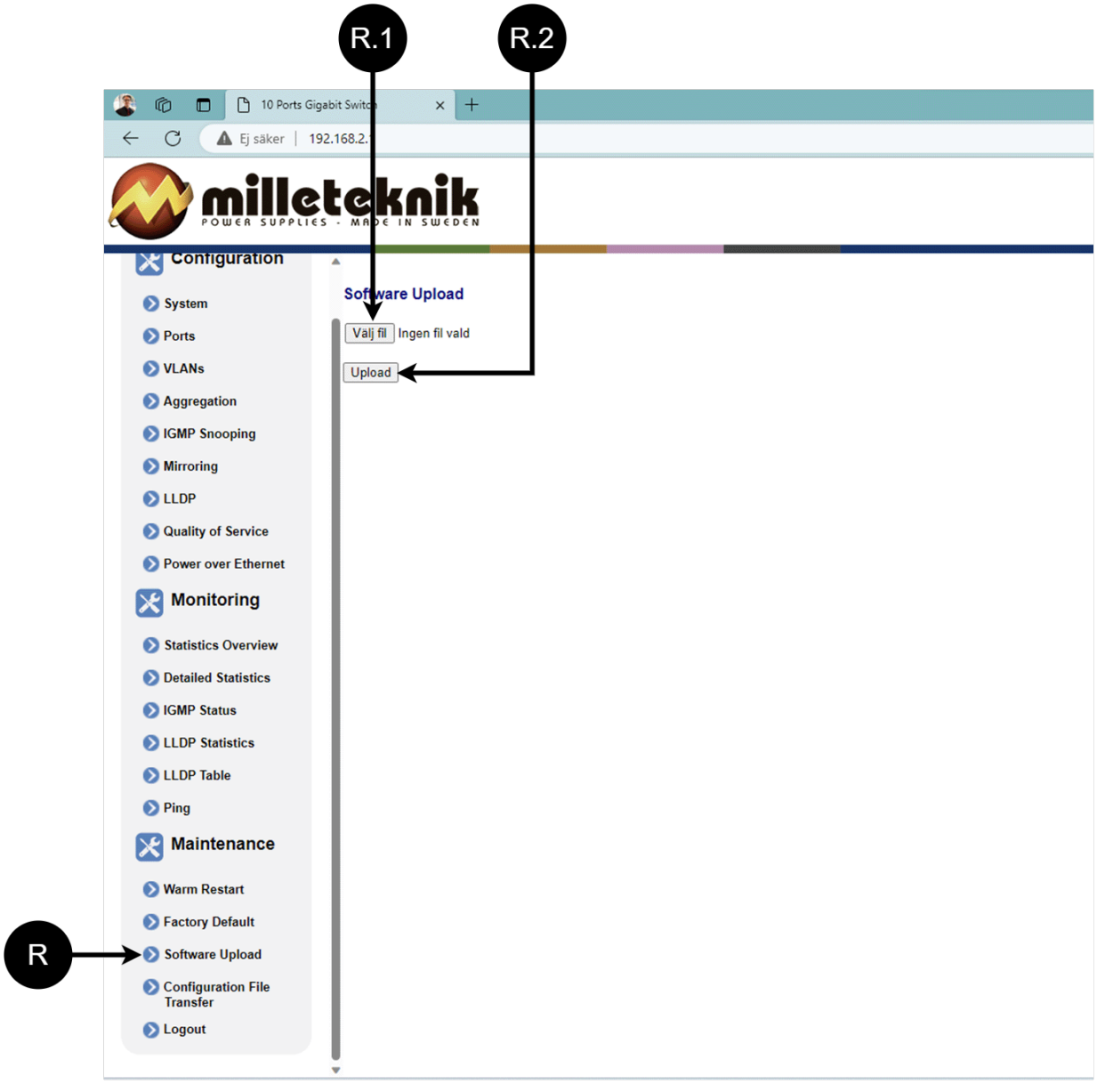


Table 20. Upload new software.

Letter, number	Explanation
R	Upload new software to the Switch.
R.1	Navigate to the location on your computer where you saved the file.
R.2	Click "Upload" to upload the software.

LOAD AND SAVE CONFIGURATION FILE

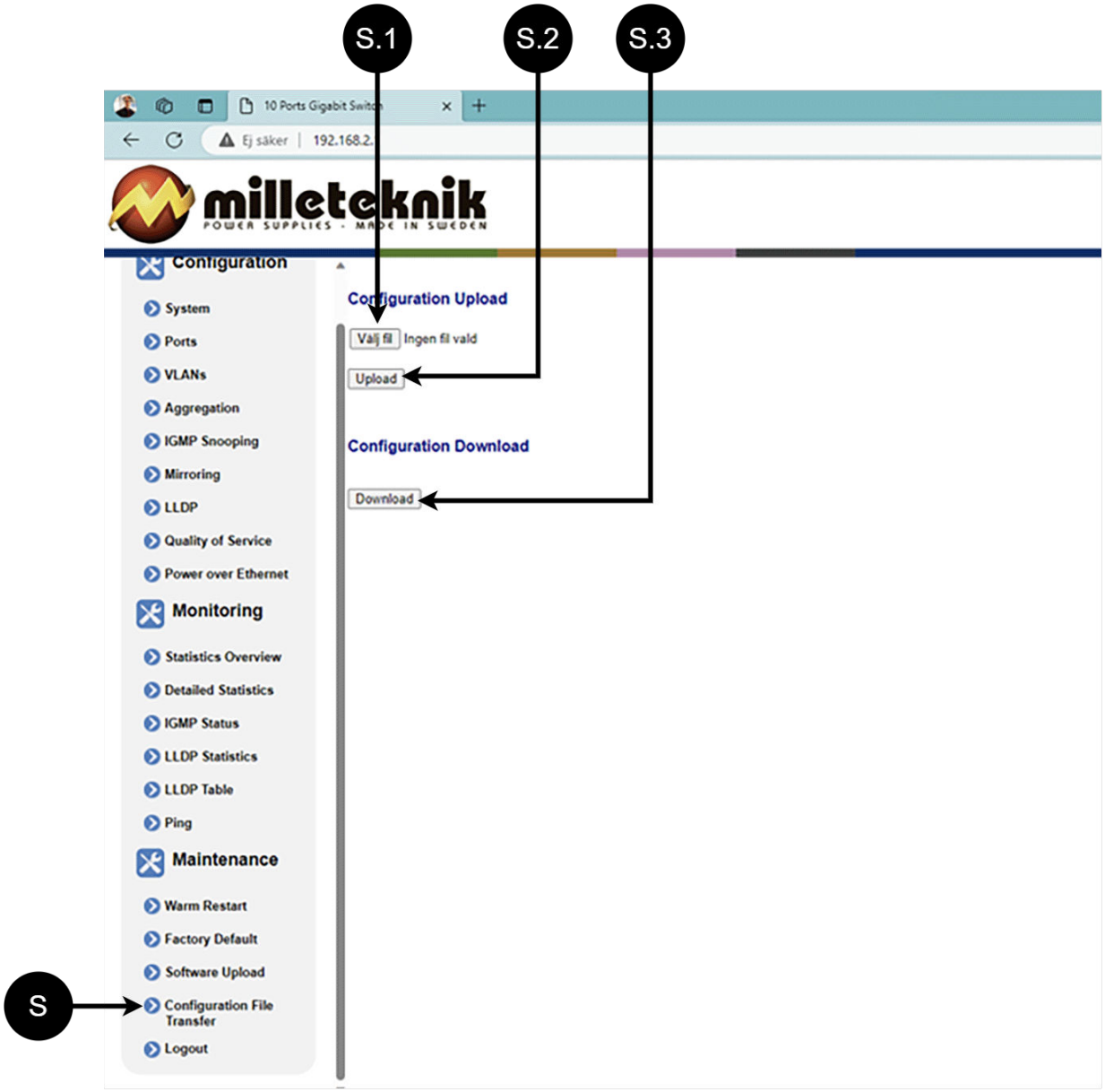
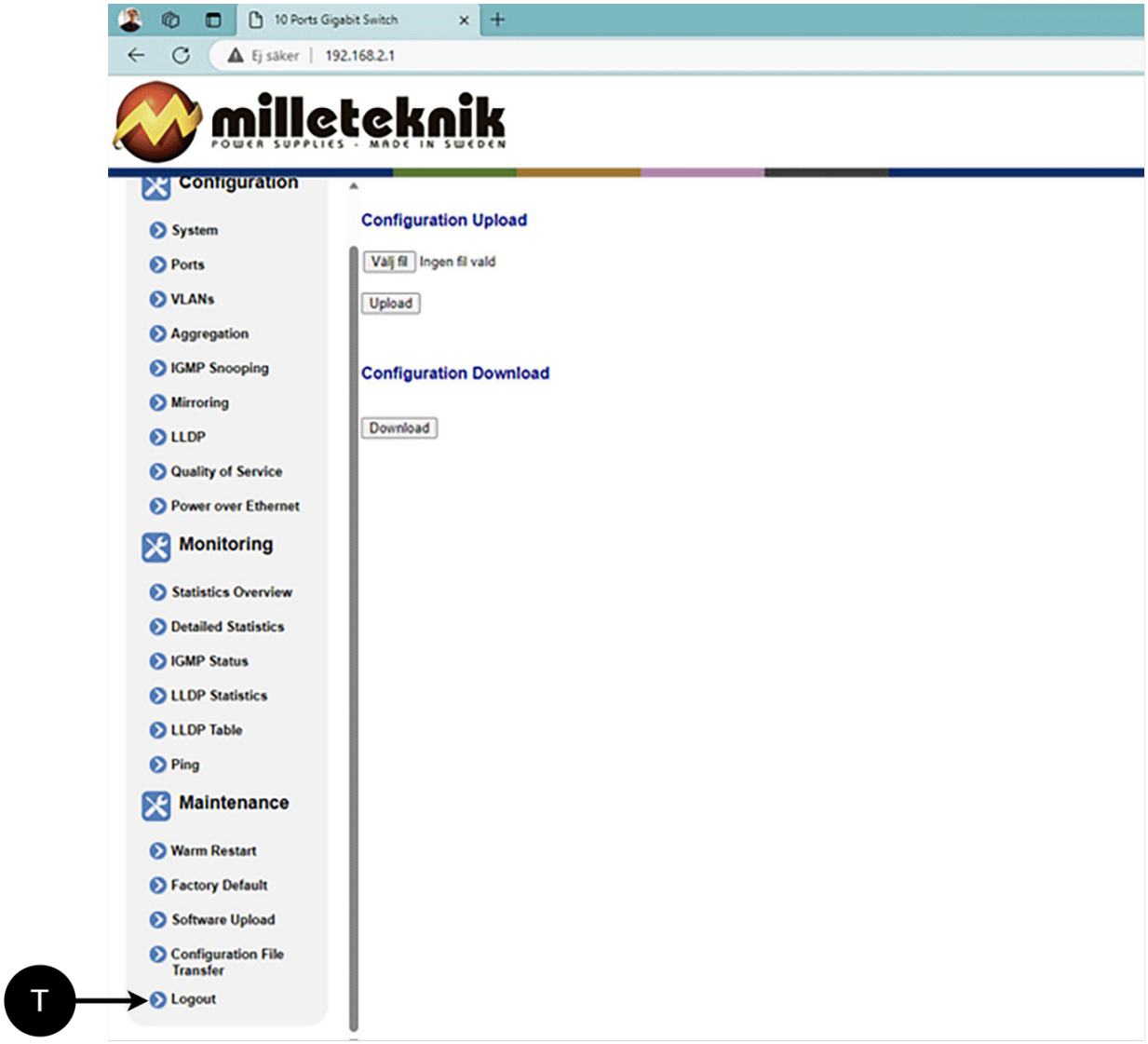


Table 21. Load and save configuration file.

Letter, number	Explanation
S	Upload or download the switch's configuration.
S.1	Select new configuration file.
S.2	Upload new configuration file.
S.3	Download configuration file to computer[a].

[a] Newer Windows computers do not allow *.cfg files to be downloaded without additional approval in the browser when downloading. Antivirus programs may delete the file during download.

SIGN OUT



T: Log out of the switch. This does not affect the operation of the switch.

About this information

All information is published subject to possible errors. Information is updated without prior notice.

Publication date 2026-05-28

Alarm displayed on cabinet door

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

Table 22. The indicator diode shows.

The indicator diode shows	Explanation
Solid green light	Normal operation.
Solid amber glow	Mains failure.
Solid red light	Battery not connected / blown fuse.

When operating system: If the indicator LED is off, deep discharge protection has been activated.

NOTICE
If the indicator light flashes every 15 seconds, the battery is fully charged and the charge is in rest phase to extend battery life. In the event of a power failure during the rest phase, the battery backup switches to battery operation as usual

Maintenance

The system with the exception of batteries is maintenance-free when installed in an indoor environment.

battery change

- If possible, disconnect mains (voltage) when replacing the battery.
- Disconnect battery cables. Note how battery cables are mounted before removing them.
- Remove battery fuse between batteries.
- Insert and fasten the new batteries.
- Connect the battery cables in the same way as before.
- Connect battery fuse between batteries.
- Switch on mains voltage. The indicator LED may not be green (up to 72 hours), until the batteries are charged.
- Test the system by briefly disconnecting the mains voltage, (= the load is driven by the batteries), and then switch on the mains voltage again.

Product sheet - power supply / battery backup

Product sheet - power supply from Milleteknik

POE

Figure 5. PoE Switch 4p FLX M

Managed PoE switch with 4 PoE Ports.

NAME, ARTICLE NUMBER AND E-NUMBER

Table 23. Name, article number and email number.

Name	Article number	E-number (SE)
PoE M-Switch 4p FLM	FM01N10224P01004PM	51 728 96

DESCRIPTION

Primary switched four, eight or 16 PoE-ports, power supply with battery backup 24 V, 30.8 W/port, with room for two 20 Ah batteries.

AREA OF USE

Power supply with backup power to power PoE devices such as surveillance cameras and other PoE powered devices. A plate for keystone modules makes the installation of PoE devices easier. An additional load output to power other 24 V applications.

Batteries drive, for example, the access system, when the power grid goes down.

Long life, energy efficient and support is available if something goes wrong, now or in 10 years.

COMMON USES

- Supports IP cameras, readers, door centers and other networked security devices
- Power and data distribution over a single network cable for simplified installation.
- Used to power IP-based access systems where both data and power go through network cabinets.

TECHNICAL DESCRIPTION

Plate for attachment of Keystone modules.

1Gb ports on PoE switch.

Constant output voltage, 24 V (which is boosted to 48 V) , regardless of battery or mains operation, which means that the entire battery capacity can be used.

For mounting on a wall or in a 19" rack.

VOLTAGE, CURRENT AND POWER

Mains voltage: 230 V AC - 240 V AC, 47 Hz - 63 Hz.

Self-consumption is the power outlet the circuit board has when the system is deployed and in battery operation.

Table 24. Self-consumption

Circuit Boards	Self-consumption (in battery operation)	Comments
CEO4 48V	32 mA	

Voltage out: 27.3 VDC, (24 V).

Charging Current: 10 A.

Power Outlet: 30.8 W/ PoE port, 5 A on 24 V load output.

LOAD OUTPUTS

PoE switch can drive load to PoE devices and motherboard can drive one (1) 24V load output to drive other applications.

ALARM

Alarms are given for: Delayed power failure alarm or low battery voltage, disconnected batteries, fuse failure and overcharging of batteries.

Alarm over RJ-45, see manual for alarms that PoE switch can give.

PROTECTION

Protection against overload, overvoltage, overtemperature, short circuit and deep discharge.

Controlled charging of batteries protects against overcharging and extends the life of batteries. Batteries are charged with a maximum of 4.5 A.

FUSES

Mains fuse: 2.5 A.

Load securing: Fuse on supply to PoE switch : 10A. Fuse on load output: 10 A.

Battery protection: 30 A.

INDICATIONS AND COMMUNICATION

LED displays information and alarms on the circuit board and on the enclosure door.

BATTERY AND BATTERY TYPE

Battery type: 12 V, AGM lead-acid battery, maintenance-free. Battery sizes must not be mixed.[1].

Two 7 Ah, Two 14 Ah, or two 20 Ah batteries.

BACKUP OPERATING TIME ON BATTERIES

The reserve operating time in battery operation depends on how large a load is connected to the power supply. If the load varies, as with frequent opening of door locks, the time that batteries can continue to power the security system decreases. To get an estimate of reserve operating times see: www.milleteknik.se/Manualer/FaQ/Reservdrifttider/

ENCLOSURE

Sheet metal cabinet for wall mounting or in a 19" rack cabinet (5 HE). Powder-coated black. Four cable entries on the top and outlet holes on the back. Cable tie holder in enclosure.

Table 25. Dimensions, with and without packaging.

Dimensions, height x width x depth.[a.]	Dimensions with packaging.
224 x 437 x 212 mm	260 x 480 x 250 mm

[a.]Dimensions of product and packaging may differ, this is because the product may lie differently in the packaging.

Table 26. Height units, fan and IP class.

HE	Built-in fan	IP class
5	Yes	IP32

WEIGHT

Table 27. Weight.

Name	Net weight	Weight incl. packaging
PoE M-switch 4p FLX M	7.8 kg	8.55 kg

INSTALLATION REQUIREMENTS

The device is intended for fixed installation. The unit must be installed indoors, environmental class 1, ambient temperature: +5°C to +40°C. Recommended ambient temperature is +15°C to +25°C (for optimal battery life).

REQUIREMENTS THAT THE PRODUCT MEETS

Table 28. The product meets the following requirements.

EMC:	EMC Directive 2014 / 30EU
Electricity:	Low voltage directive: 2014/35 / EU
PoE:	IEEE 802.3af, IEEE 802.3at/30.8 W Note that 802.3at type2 is not supported, as the PoE card lacks a handshake function for type 2. IEEE 802.3af, IEEE 802.3at/30.8 W up to Type2, Class 4.
CE:	EC Directive in force: 765/2008
Machinery Directive	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).
Ecodesign	Milleteknik's products are intended for professional use and are therefore not directly covered by the Ecodesign Regulation (EU 2019/1782). As some components may be covered, we nevertheless disclose relevant information to give our customers confidence in their choice

Efficiency (%)[a.]	Standby consumption, typical (W):
89%	1.27 W
90%	2.90 W

[1]The number of batteries listed represents the maximum number that the device can handle at the same time. If multiple battery sizes are specified, this means that the device can only accommodate one battery size at a time.

Efficiency (%)[a.]	Standby consumption, typical (W):
89%	3.38 W

[a.]At rated load.

CE

GUARANTEE

The product has a two-year warranty for manufacturing defects. Batteries and wearing parts are not covered by warranty.

EXPANDABLE, OPTIONS AND ACCESSORIES

Tamper switch

MANUFACTURING, LIFESPAN, ENVIRONMENTAL IMPACT AND RECYCLING

Manufactured by Milleteknik in Partille, Sweden.

The product is designed and constructed for a long service life, which reduces the environmental impact. The life of the product (except wearing parts) depends on, among other things, environmental factors, mainly ambient temperature, unforeseen load on components such as lightning strikes, external impact, handling errors, etc. Products are recycled, simply because they are modular, by being left at the nearest recycling station or sent back to the manufacturer.[2]Contact your distributor for more information.

LINK TO THE LATEST INFORMATION

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

PoE

LINK TO TECHNICAL SPECIFICATIONS

LINKS TO MANUALS AND PRODUCT SHEETS

You can find manuals and product sheets at: www.milleteknik.se The QR code below takes you to the product page.

Name	Dimensions	Batteries that fit	Link
PoE M-switch 4p FLX M	224 x 437 x 212 mm	2 pieces 20 Ah.	

Batteries are only included if specified, otherwise batteries will need to be purchased separately.

MISCELLANEOUS

The difference between PoE, PoE+ and PoE++.

[2]Costs incurred in connection with recycling are not reimbursed.

Table 29. Max power PoE.

-	PoE	Poe+	PoE++
Compatible[a.]	-	PoE	PoE, PoE+
Official name	IEEE 802.3af	IEEE 802.3at	IEEE 802.3bt
Maximum power	13 W	25 W	71 W

[a.]The power supply follows "up", but not "down". A PoE can never power a PoE+/PoE++ device that requires more than 13 W.

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Publication date 2026-05-28

Product life cycle, environmental impact and recycling

The product is designed and constructed for a long service life, which reduces the environmental impact. The product's service life depends on, among other things, environmental factors, mainly ambient temperature, unforeseen load on components such as lightning strikes, external damage, handling errors, and more. Products are recycled by being handed over to the nearest recycling station or sent back to the manufacturer. Contact your distributor for more information. Costs that arise in connection with recycling are not reimbursed.

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