Installation and commissioning

Instructions for installation and commissioning.

Instruction No: 350-299

Product Identification

Table 1. Product designation, part number and email number.

Product designation	Article number	E-number (SE)
PoE Switch Managed 4p UT M	PL02P30024P050P-UTM	51 734 03

PoE

If

PoE Switch Managed 4p UT M is a power supply with PoE switch for outdoor use. Built to withstand Nordic conditions - summer as winter. The product is different from indoor battery backups from Milleteknik and some features have been added and

Revisions and the edition of this document

The current and most recently published edition of this document is available at www.milleteknik.com.

The validity of this document can not be guaranteed, as new editions are published without prior notice.

Original instructions for use: Swedish.[1].

Instructions for use, technical data and translations thereof may contain errors. It is always the responsibility of the installer to install the product in a safe manner.

[1]Translations in languages other than Swedish are indicative only and not verified. Translation should always be checked against the Swedish original to ensure accurate information

Symbols

Table 2. Symbol Explanation

Symbols	Name	Explanation
	Warning	Risk of electric shock, improper installation or hot surfaces. Appears in some manuals
	Note	Used for supplementary information that clarifies the text.
	Caution/Important	Indicates the risk of equipment damage or malfunction. Also used for information that is important but not security-related
	Tips	Displays practical advice or shortcuts for installation, operation, or service.
	CE marking	The product complies with applicable EU directives and harmonised standards.
	Read the manual	Please read manual before installation and service.
	Do not dispose of in household waste	The product is covered by the WEEE Directive and must not be disposed of with household waste, it must be recycled and delivered to a recycling centre.
	Recycling	Packaging, products and other materials that do not contain electronics must be recycled in accordance with local environmental regulations.

Installation — general information

Installation shall be carried out by a competent electrician in accordance with the applicable national electrical installation rules.

The product is of protection class I and must be connected to a grounded 230 V AC circuit.

- A main switch according to IEC 60947-1 shall be provided in the fixed installation. The switch should be easily accessible and clearly marked with its function.
- The area of the supply cable shall be at least 1,0 mm² and fitted with a fuse T 2,5 A (slow-blown) or equivalent.
- AC and low voltage cables must not be pulled together. Keep separate cable chutes or bundles
- Check that protective earth (PE) is properly connected before turning on voltage.
- Ensure free air circulation around the enclosure at least 100 mm, unless otherwise specified. Ventilation openings must not be covered.
- The product is intended for outdoor installation.

These general requirements apply to all Milleteknik products with 230 V mains connection.

Requirements for main switch, fuse and cable area

In order to comply with applicable electrical safety requirements, the installation shall be equipped with a main switch according to IEC 60947-1.

Table 3. Main switch and fuse

Component	Requirements
Main switch	A main switch according to IEC 60947-1 shall be included in the installation and be easily accessible. Separated phase (L) and neutral (N)

Component	Requirements
Fuse	The supply circuit shall be protected by a fuse or automatic fuse with rated current according to the product specification (normally T 2,5 A slow-blow or equivalent). Refer to the device's nameplate.
Fuses	Approved type according to IEC 60127.
Cross-sectional area (230 V)	At least 1,0 mm^2
Cable length	In the case of longer wiring, voltage drops should be taken into account so that the operating voltage does not fall below 230 V ± 10% at the unit.
Strain relief	All cables must be properly secured and strain relief checked before energizing the unit.

These requirements apply to all Milleteknik products with 230 V mains connection.

The table below shows recommended cable area for low current installations at different voltages, current strengths and cable lengths. Values are based on copper cable and a maximum voltage drop of approximately 3% to ensure operational reliability.

Table 4. Cable area weak current

V	Current strength (A)	Cable length 10 meters	Cable length 30 meters	Cable length 60 meters	Cable length 100 meters
24V	1 A	0,75 mm^2	0,75 mm^2	1,5 mm^2	1,5 mm^2
24V	3A	0,75 mm^2	0,75 mm^2	1,5 mm^2	2,5 mm^2
24V	5A	0,75 mm^2	1,5 mm^2	2,5 mm^2	4 mm^2
24V	10A	1,5 mm^2	2,5 mm^2	6 mm^2	-*
24V	15A	1,5 mm^2	4 mm^2	-*	-*
24V	25A	2,5 mm^2	6 mm^2	-*	-*
24V	40A	4,0 mm^2	-*	-*	-*
* Cable area would exceed connector terminal dimensions therefore it is not possible to use cable larger than 6 mm^2					

Enclosures

General assembly instructions

Outdoor mounting on pole

- The product is intended for mounting on a pole with rails or corresponding fastening parts.
- Enclosure to be mounted vertical.
- For good ventilation, at least 100 mm of free space should be provided around the enclosure.
- Use rails and fasteners that are compatible with the weight and mounting pattern of the product.
- Install the rails in the product before installing the post brackets or pipe clamps.
- Place pipe clamps or corresponding fastening parts around the post and connect them to the mounting points of the rails.
- Check that the product is aligned and mounted in a vertical position before tightening.
- The diameter and material of the post should be suitable for the selected type of fastening detail.
- Tighten all screws and nuts according to the recommendations of the fastening details.
- Ensure that the product is firmly fixed and cannot rotate or slide on the post after assembly.
- Cable connections should be oriented downwards or according to the specific installation instructions of the product.
- Avoid locations where water can flow directly onto the enclosure from surfaces above.
- Avoid placement in direct sunlight or near heat sources.
- Installation shall be carried out in accordance with the applicable installation rules and by a competent installer.

Mounting

Use the appropriate screw for mounting on a wall or in a 19" rack. Screws for mounting on a wall or in a rack are not included.

For wall mounting in concrete, concrete screws must be used. For rack mounting, M6 with basket nut is used

Screw length should be adjusted according to wall material and load. The specified screw length is the minimum allowable length

Table 5. Screw when mounting

Kaspling	Number	Screw[a.]
OUT M	4	Concrete screw 5,0×40 mm

[a.]Screw for mounting is not included.

Mounting holes, spacing and ø.

Table 6. Dimensions

Enclosure, dimensions (WxHxD).	Mounting hole inside (W x H)	External mounting dimensions (W x H)
486 x 530 x 286 mm	-	-[a.]

[a.]Mounted on pole, see chair bracket for details.

Weight with batteries

Table 7. Weight

Net weight without batteries	Battery type	Number	Batteries/weight per piece	Weight with batteries
14.3 kg	20 Ah	2	6.0kg	26.3 kg

Mounting options and accessories

To ensure a smooth installation, we offer several custom mounts for our UT series enclosures (S, M and L). In the matrix below you will see which options are compatible

Please note that a wall mount is always included as standard with all models. For pole mounting or needing extra sun protection, separate optional kits are required

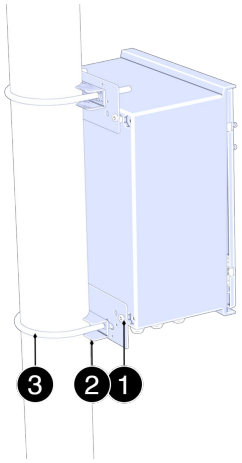
Table 8. Matrix bracket

Enclosure	Wall Bracket	Pole Bracket	Sun protection	Camera and pole mount (upcoming)	Speaker Bracket
OUT M	Included	Pole Mount Kit for UT S and UT M	Sun Shield Kit	Camera Mount Kit for UT M	Speaker Mount Kit for UT M

Table 9. Matrix bracket

Accessories	Enclosure
Pole Mount Kit for UT S and UT M	UT S and UT M
Sun Shield Kit	UT S, UT M and UT L
Camera Mount Kit for UT M	OUT M
Speaker Mount Kit for UT M	OUT M

Mounting on pole



Mounting on pole

See component overview for screw, nut, washers and spacers.

Table 10. Components for assembly

No.	Explanation
1	Fastening plate.
2	Counter.
3	U-bolt.

Assemble in this order:

1. Place the mounting plates (3) on the upper and lower attachment points of the enclosure and attach them lightly with the screws provided. Do not tighten finally yet.
2. Pass the lower U-bolt (2) around the post and through the holes in the lower mounting plate. Install washers and nuts. Tighten lightly.
3. Pass the upper U-bolt (2) around the post and through the holes in the upper mounting plate. Install washers and nuts
4. Adjust the position of the enclosure so that it is in solder and centered toward the post.
5. Tighten all nuts in sequence: — lower U-bolt — upper U-bolt — screws to the mounting plates
6. Check the attachment by lightly loading the enclosure forward/backward to ensure stable mounting.

Component overviews

Component Overview Mounting Kits

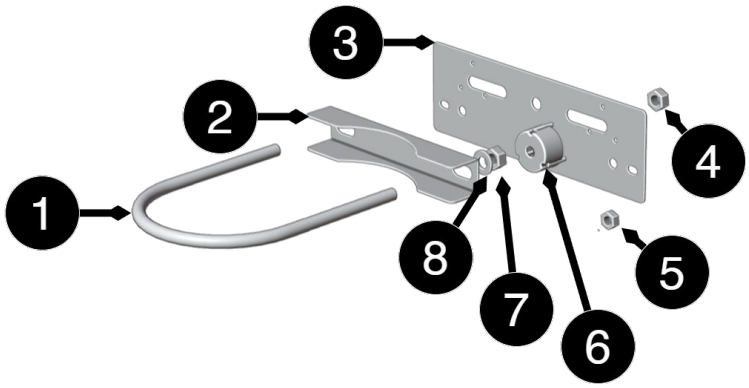
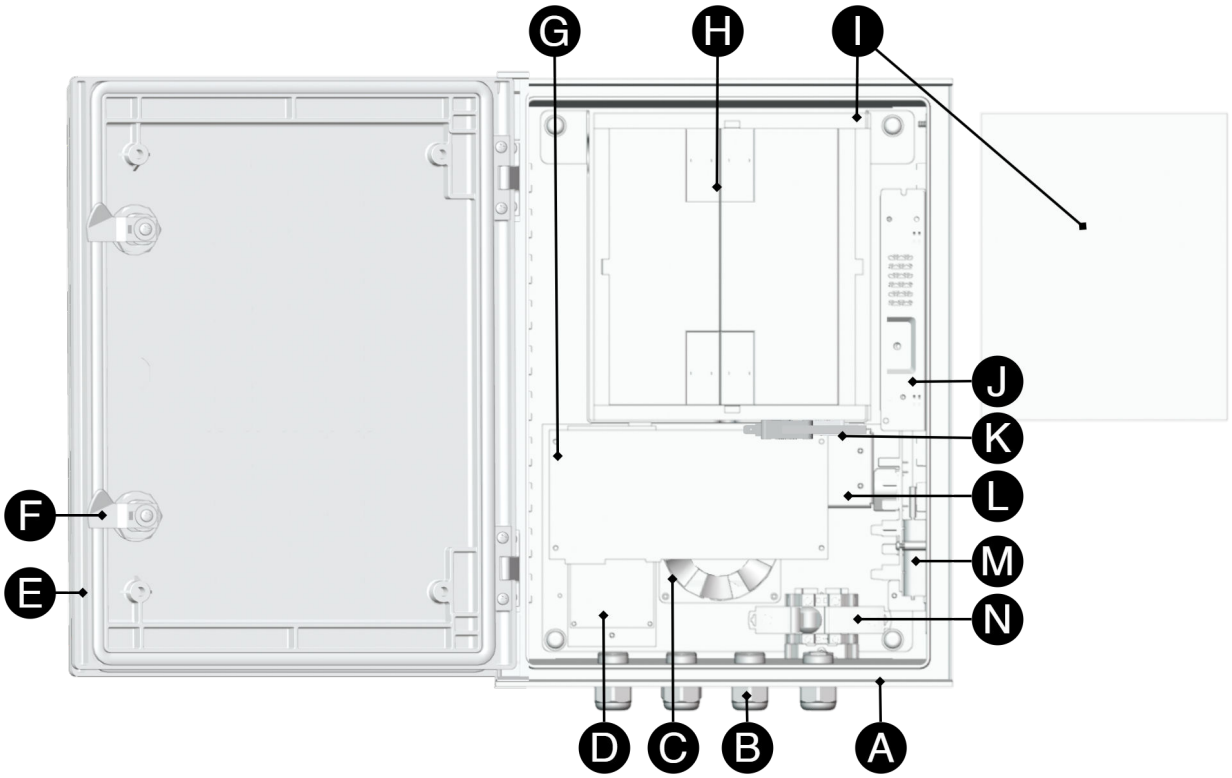


Table 11. Component Overview

No.	Explanation	Size	Number
1	Fixing plate	125mm	2
2	U-bolt for pole	-	2
3	Washers and nuts	-	2
4,7	Nut	M10	4
5	Nut	M6LM	8
6	Distance	Ø 36 mm, depth 20 mm	4
8	Washer	10 (5x20x2)	4

Component Overview PoE Switch Managed 4p UT M

Figure 1. Component Overview PoE Switch Managed 4p UT M



Configuration may differ from delivered product.

Table 12. Component Overview

Letter	Explanation
A	Enclosure.
B	Cable grommets.
C	Fan.
D	Power card - power supplies the PoE board with 48 V DC.
E	Door.
F	Lock.
G	Poe card.
H	Batteries, (purchased separately).
I	Isolation.
J	Power supplies.
K	Sabotage contact.
L	Temperature sensors.
M	Scoreboard.
N	Automatic fuse and connection incoming 230 V AC.

Connection of supply voltage, 230 V AC

Before connecting, the supply circuit should be disconnected and voltage-free. Verify that the conductor area and cable type meet the applicable installation rules and that the strain relief and insulation levels comply with the requirements for 230 V AC

After connection, all screw connections should be checked and tightened. Tensioning shall only take place after mechanical protection, caps and housing have been reassembled and comply with the contact protection according to EN 62368-1

IMPORTANT
Installation and connection of 230 V AC may only be carried out by a competent electrical installer according to SS 436 40 00.

- L (Phase) — connect the incoming phase conductor.
- N (Neutral) — connect the incoming neutral conductor (zero).
- PE (Protective Soil) — connect the protective soil to the intended ground terminal. Protective soil is mandatory to maintain the prescribed level of protection of the equipment (protection class I)

Figure 2. Connection 230 V AC.

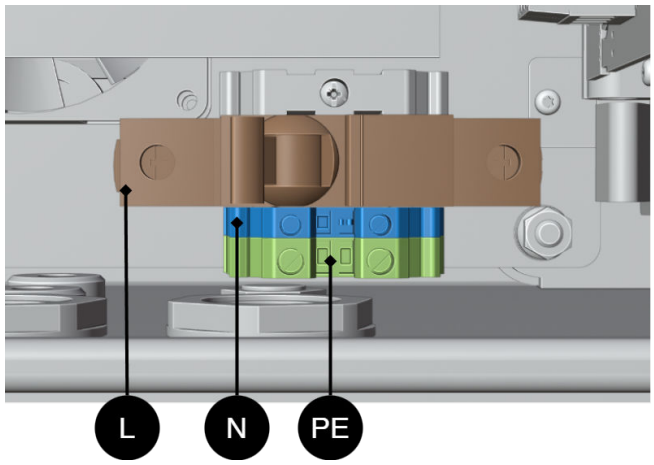
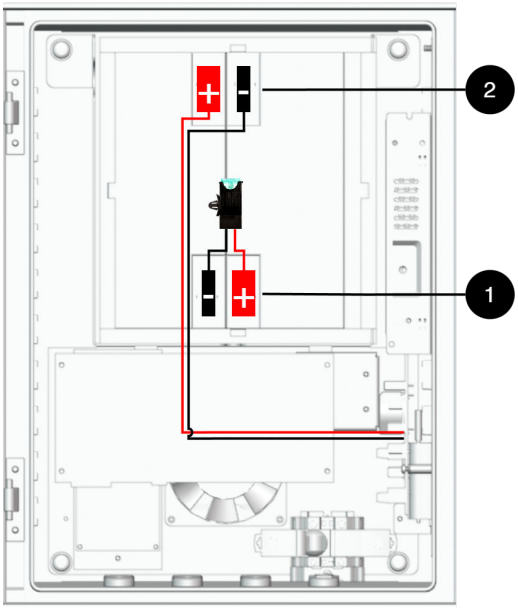


Table 13. Connection 230 V AC

Designation	Explanation
L	Phase.
N	Neutral (zero)
P.E.	Soil.

Batteries - placement and connection

Connecting batteries



Note that configuration may differ by product.

Table 14. Connecting batteries.

Nr	Explanation
B1-	Minus terminal to motherboard.
B1+	Plus terminal to battery fuse.

Short description for PoE switch 4p

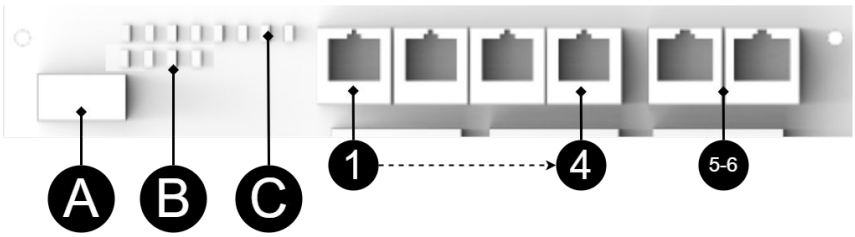
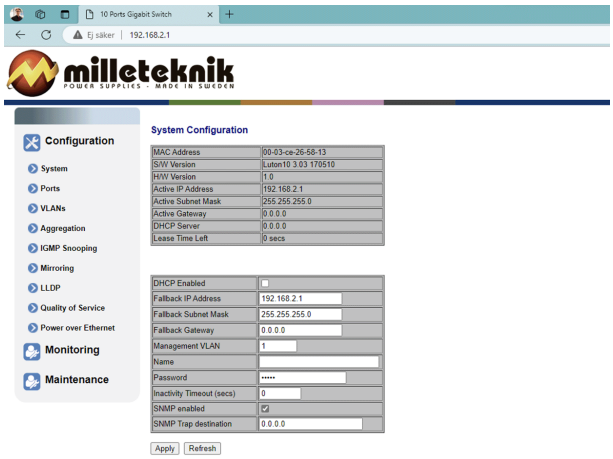


Table 15. Short description PoE switch 4p.

No	Explanation
1-4	4 pcs RJ-45 powered ports for connecting PoE devices.
5-6	2 pcs. RJ-45 ports for connecting devices, not PoE-fed.
A	Dip switch.
B	Yellow LED on = PoE device connected. This is only an indication that the port is connected and not the connected device's status.
C	Indication, green LED lights up when device is plugged in. This is only an indication that the port is connected and not the connected device's status.

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

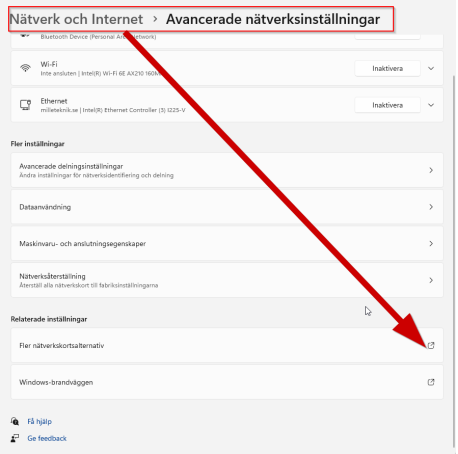
IP address of the switch (factory setting): **192.168.2.1**

Password (factory setting): **admin**

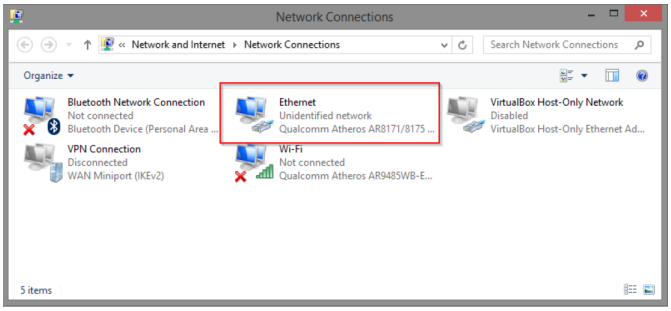
NOTICE

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.

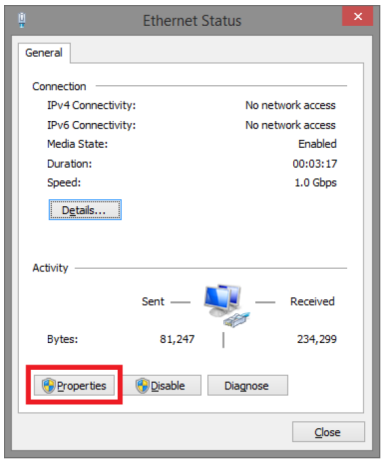
1. Open settings and go to **Network and Internet** -> **Advanced network settings**. Open **more network card options**.



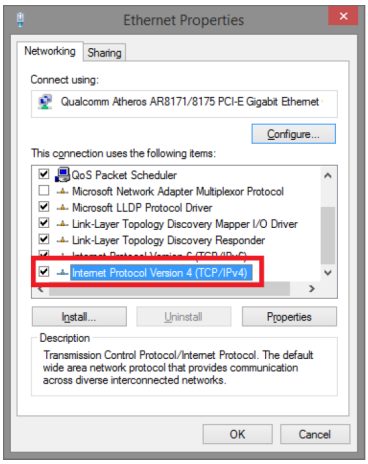
2. A Network Connections window will appear showing all available network connections on the computer. Double-click the network connection you use to connect to the switch.



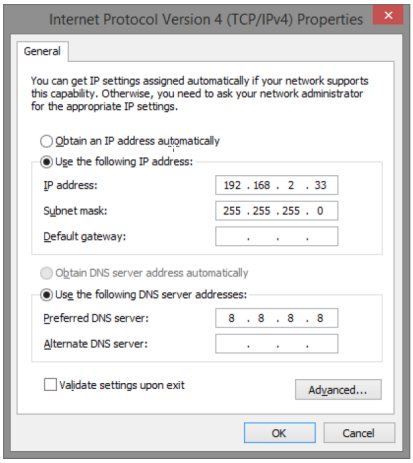
3. Ethernet status window appears. Click the button **Characteristics** as shown in the figure below.



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.

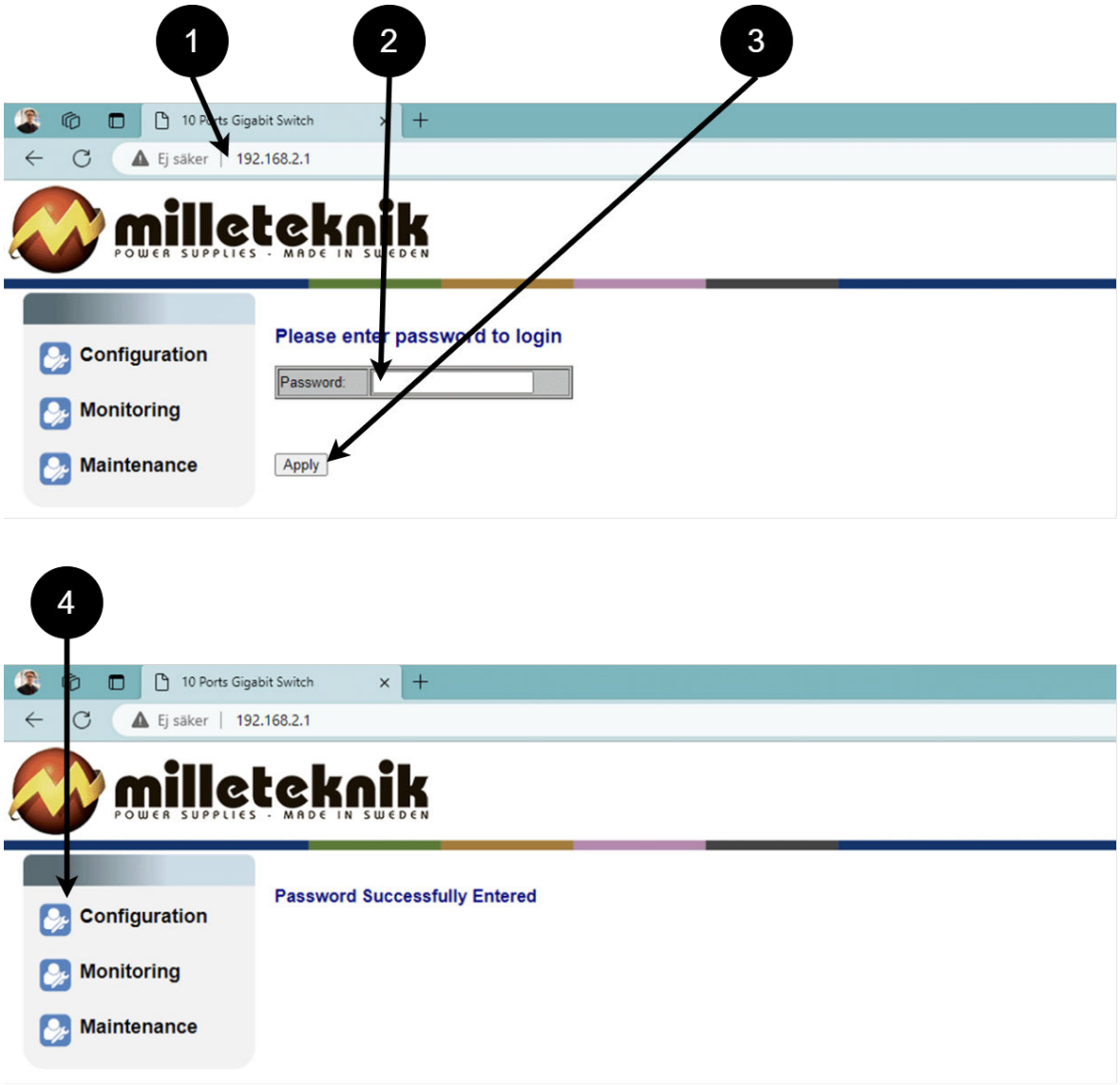


Table 16. Log in to the switch.

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

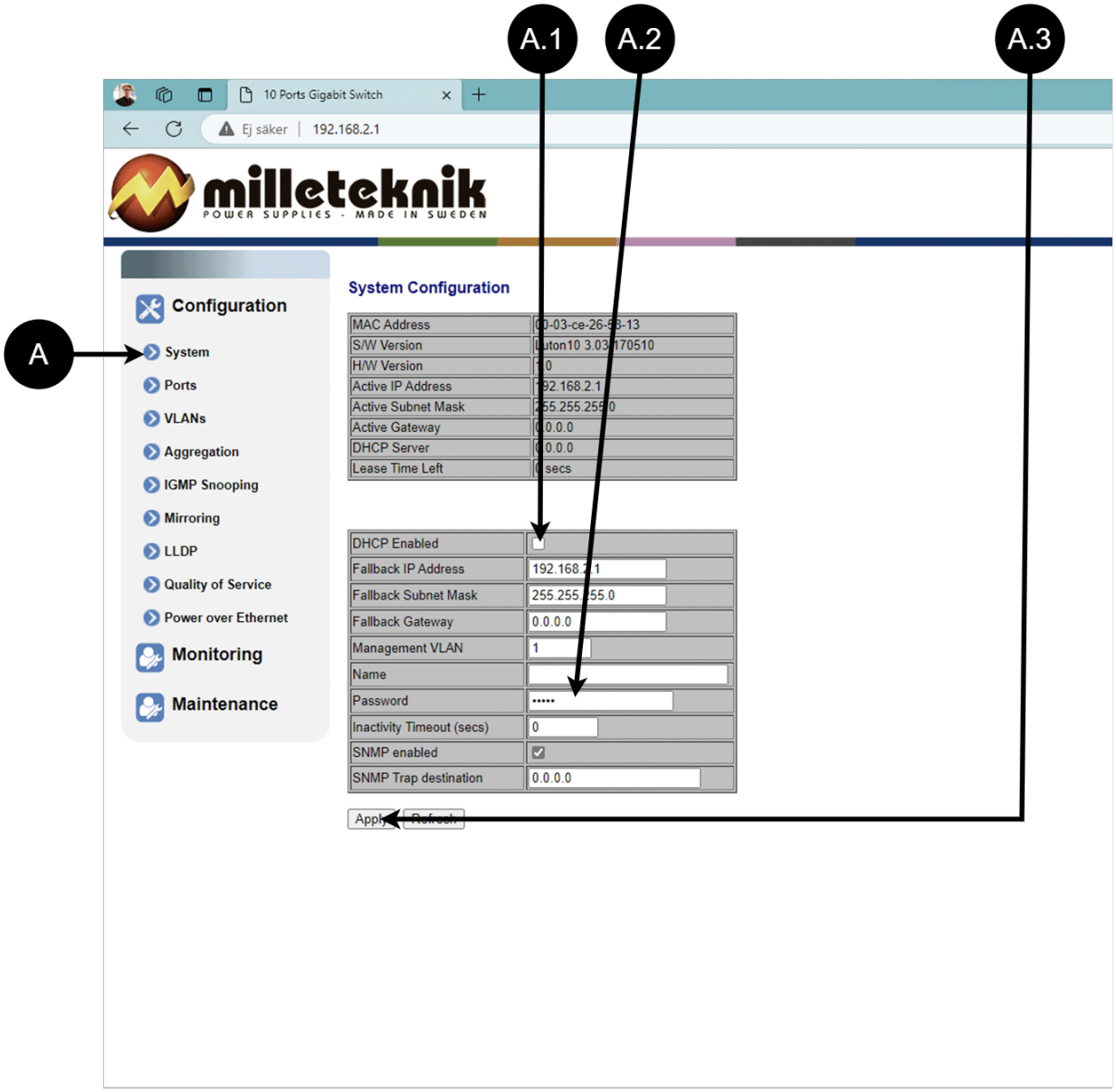


Table 17. System, configuration.

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 18. Ports, configuration.

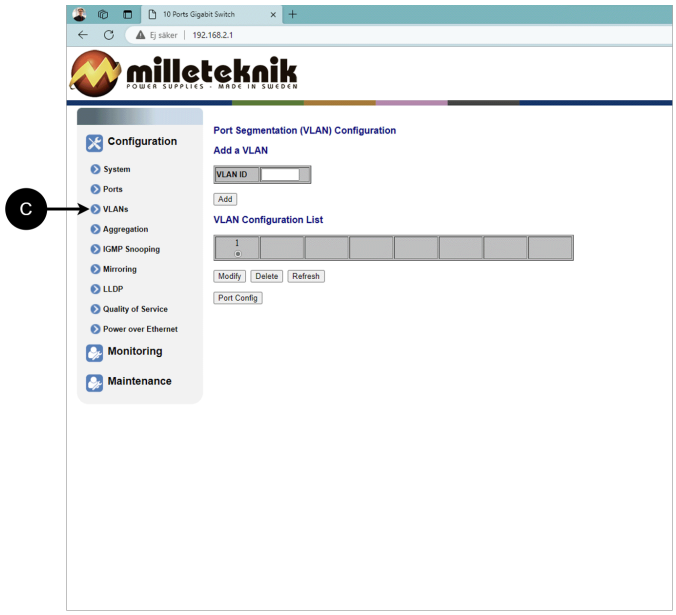
Letter, number	Explanation
B	Gates
B.1	This setting normally does not need to be changed. Select the speed of the PoE switch's ports.
B.2	This setting normally does not need to be changed.

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 19. 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.

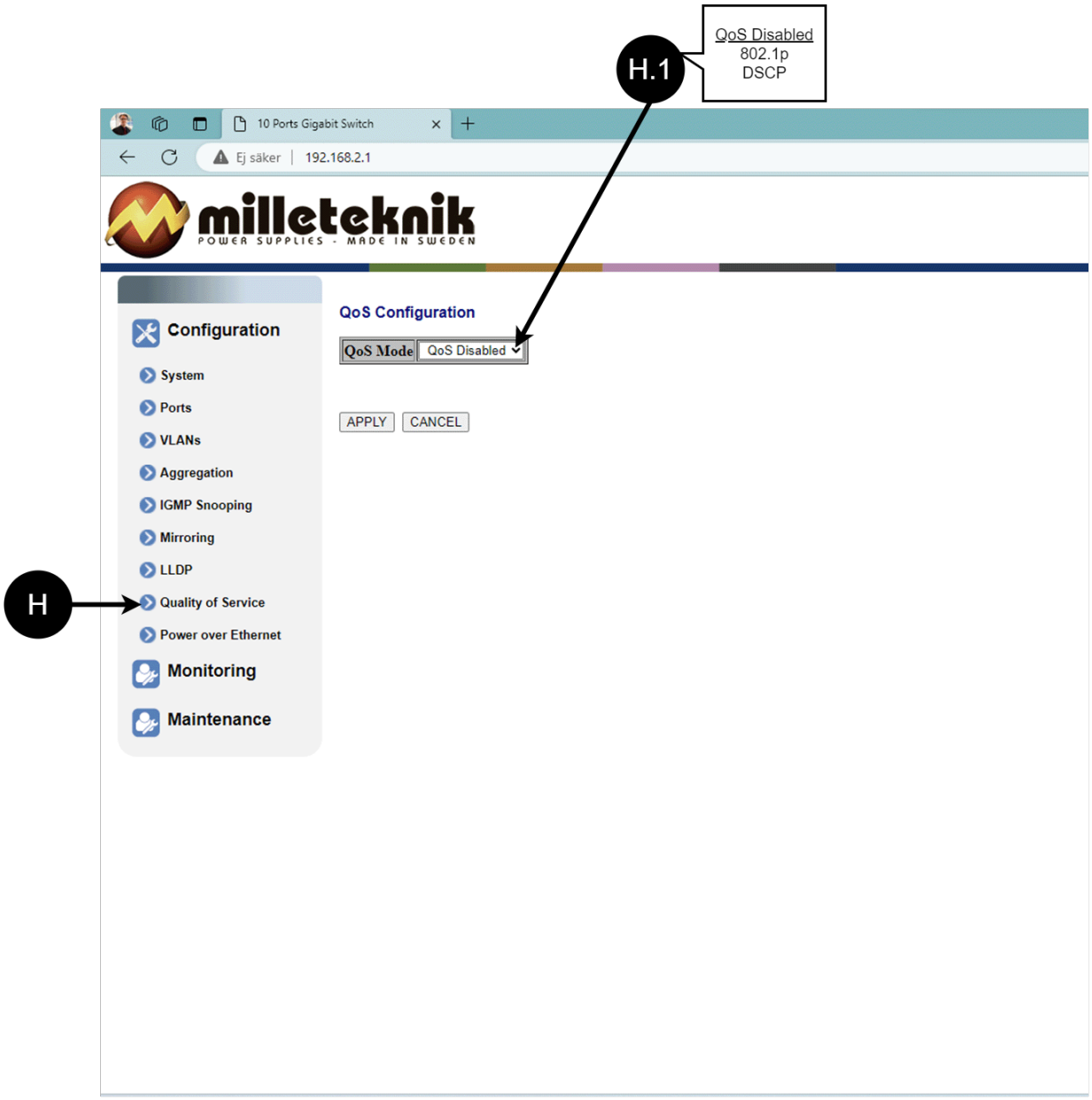


Table 20. QoS, configuration.

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.
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 21. 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 22. Statistics, overview.

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

Statistics, detailed

Table 23. Statistics, detailed.

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

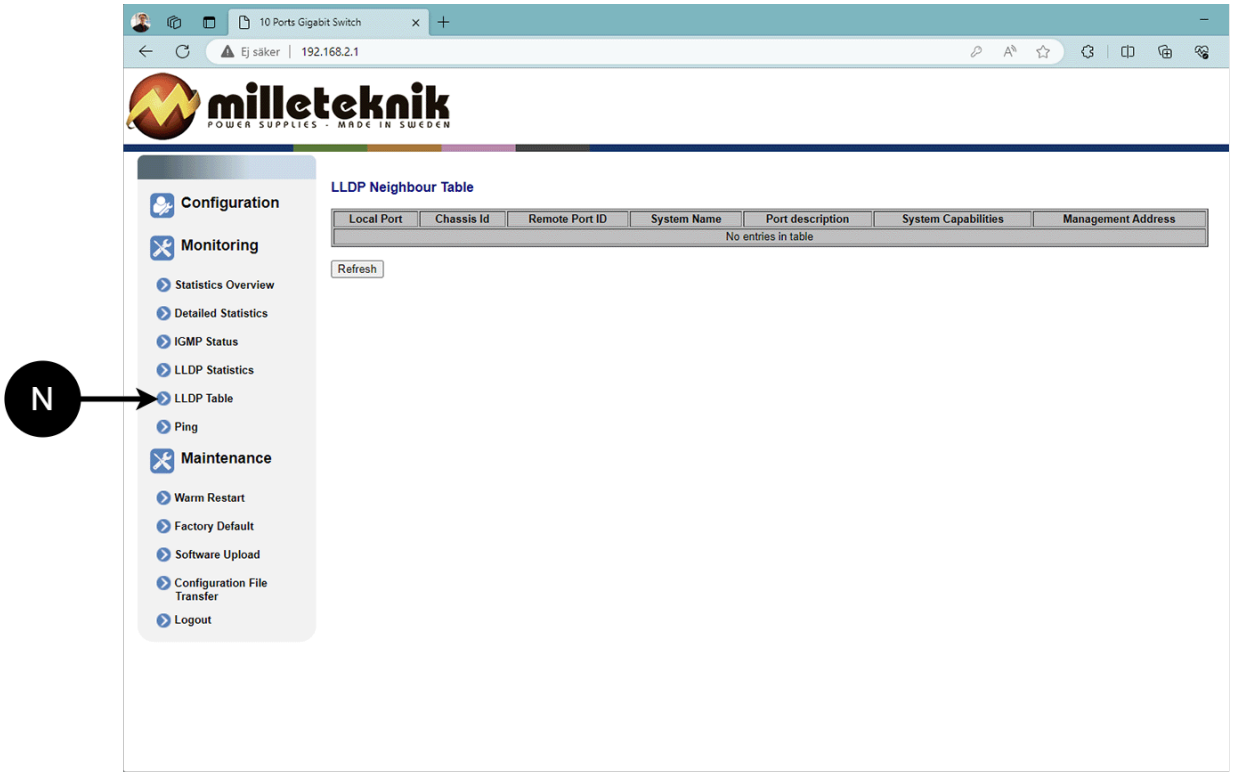
IGMP status

L: Status of IGMP

LLDP statistics

M: LLDP statistics

LLDP table



N: LLDP overview.

Ping

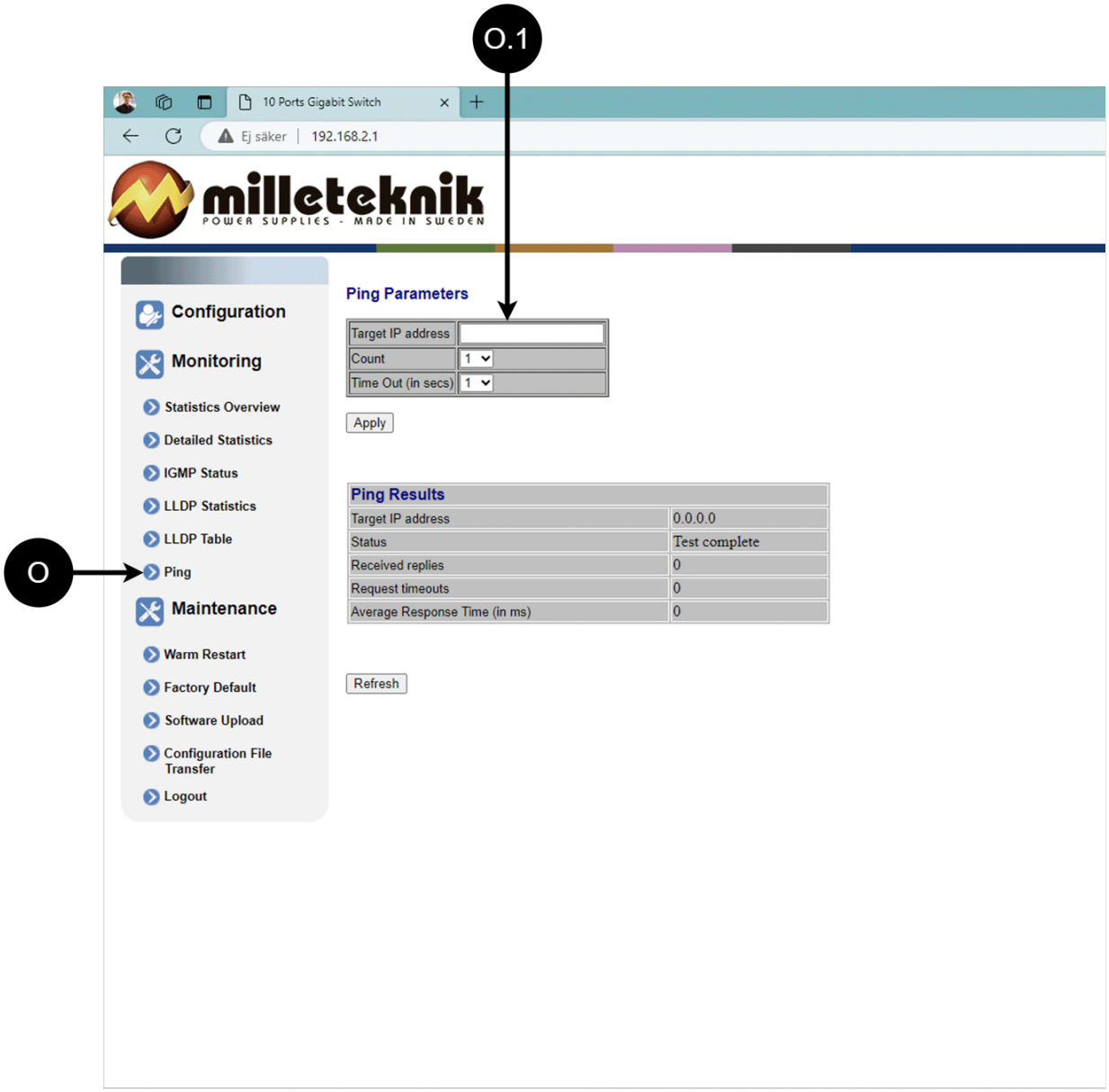


Table 24. Ping.

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.

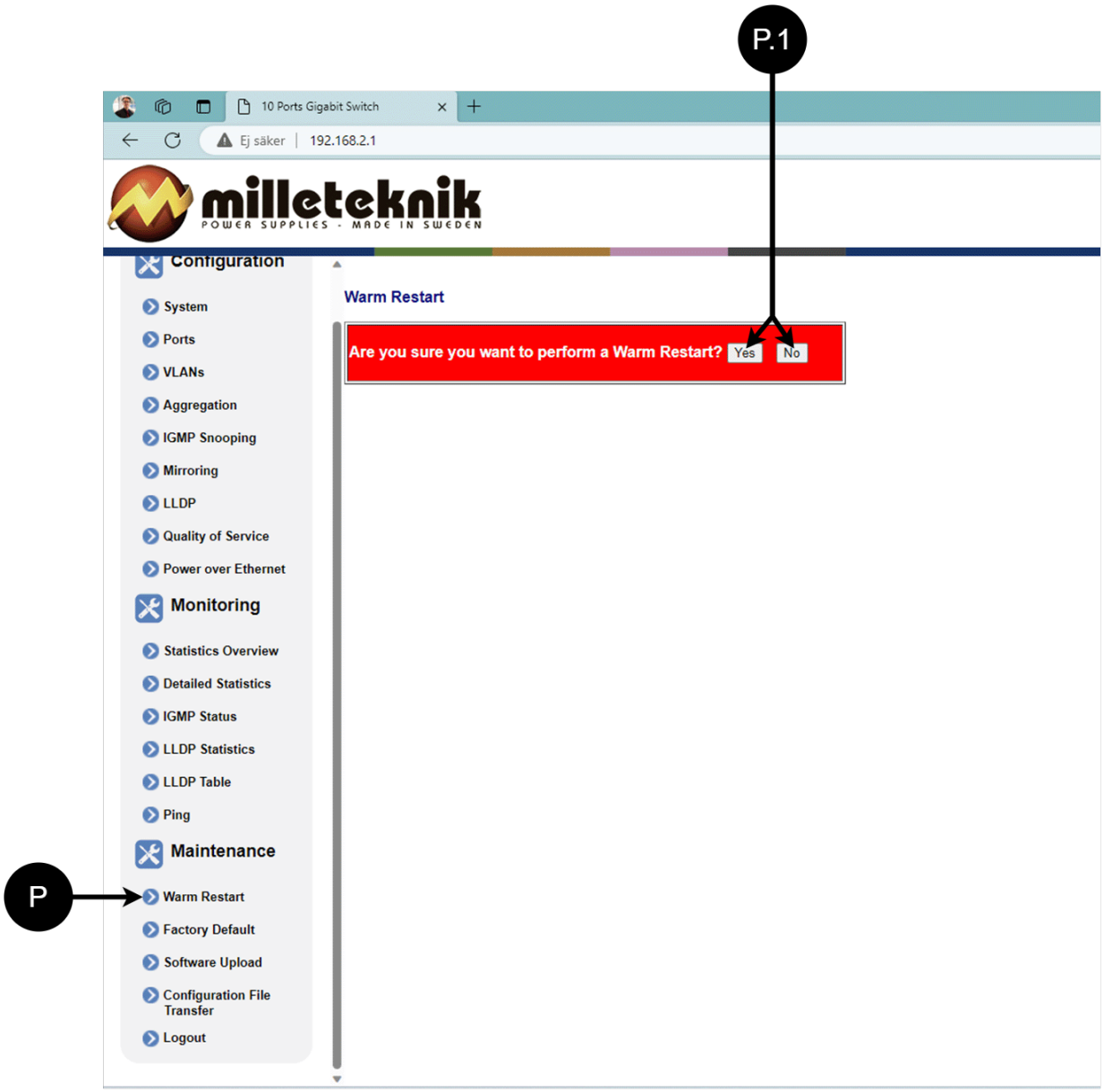


Table 25. Restarting the PoE switch.

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 [24]

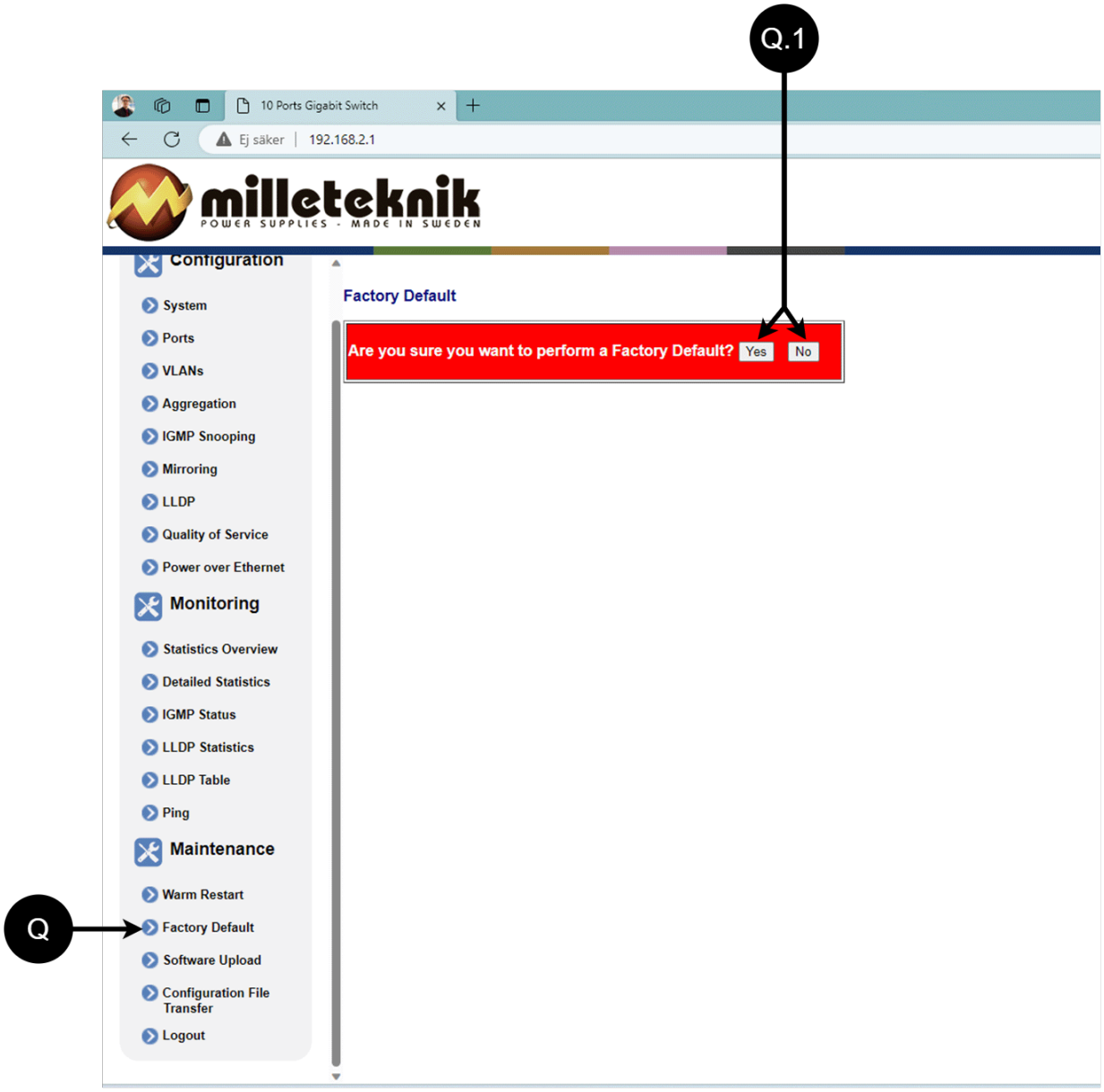


Table 26. PoE switch factory reset.

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.

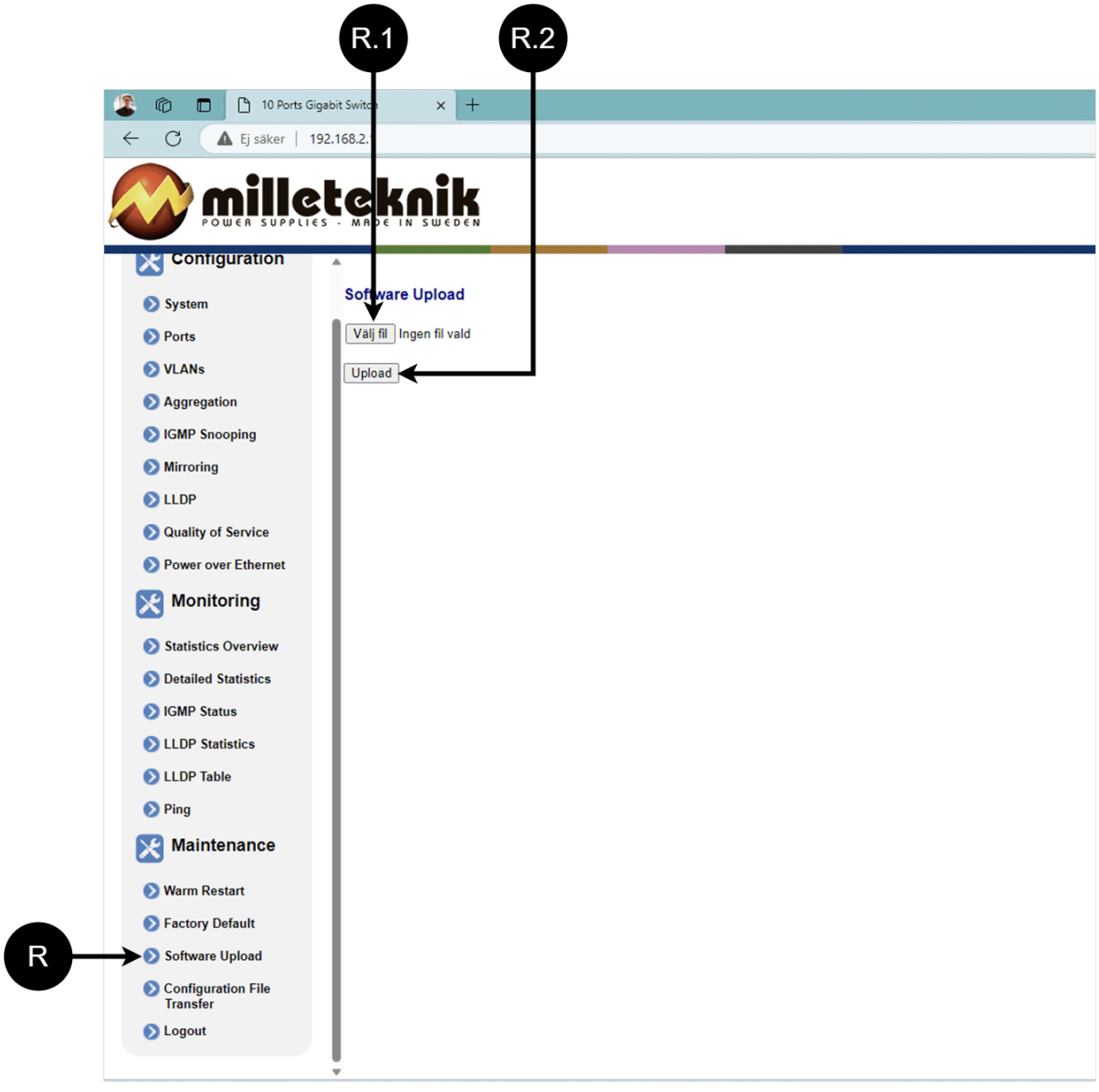


Table 27. Upload new software.

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

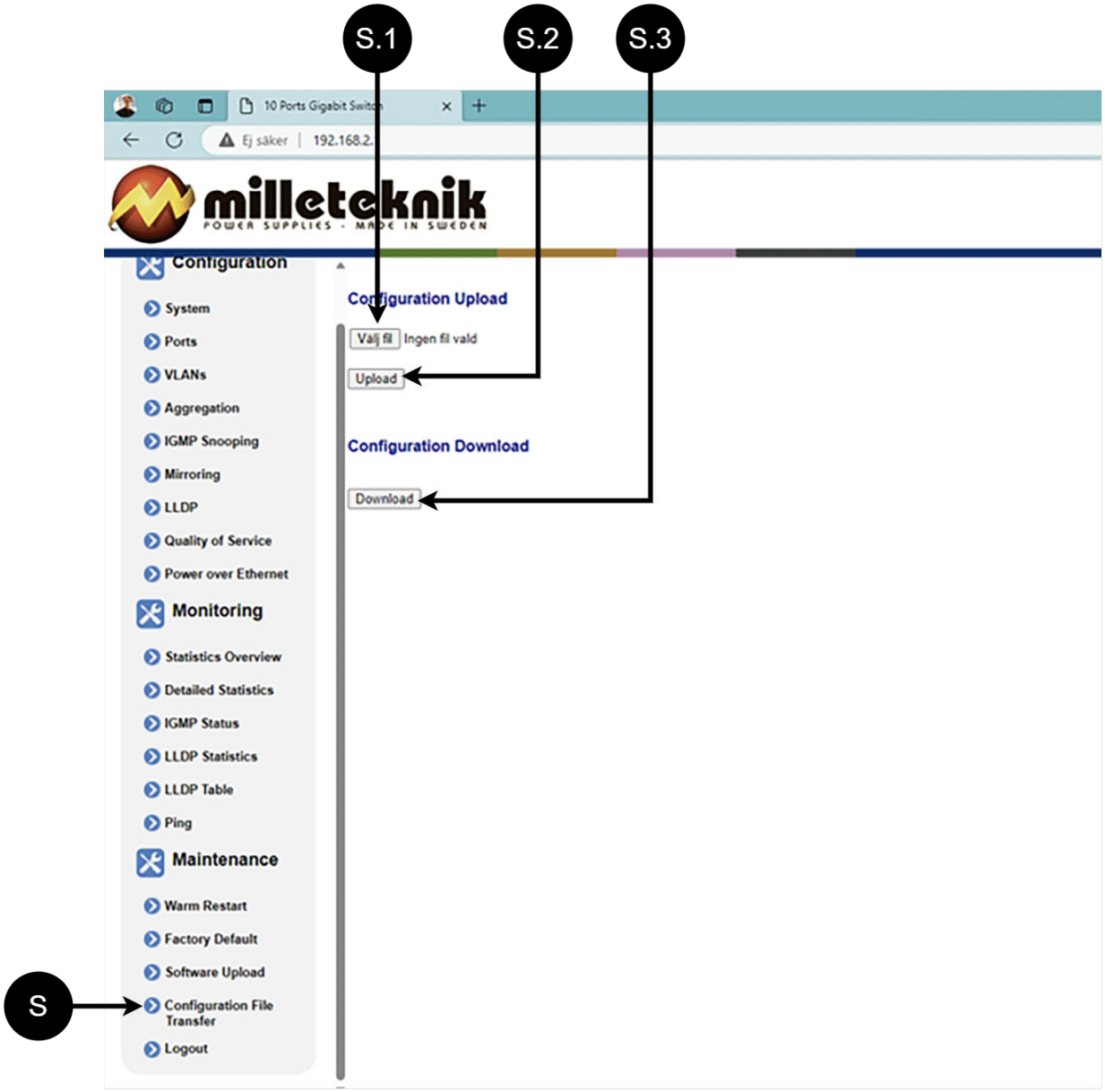
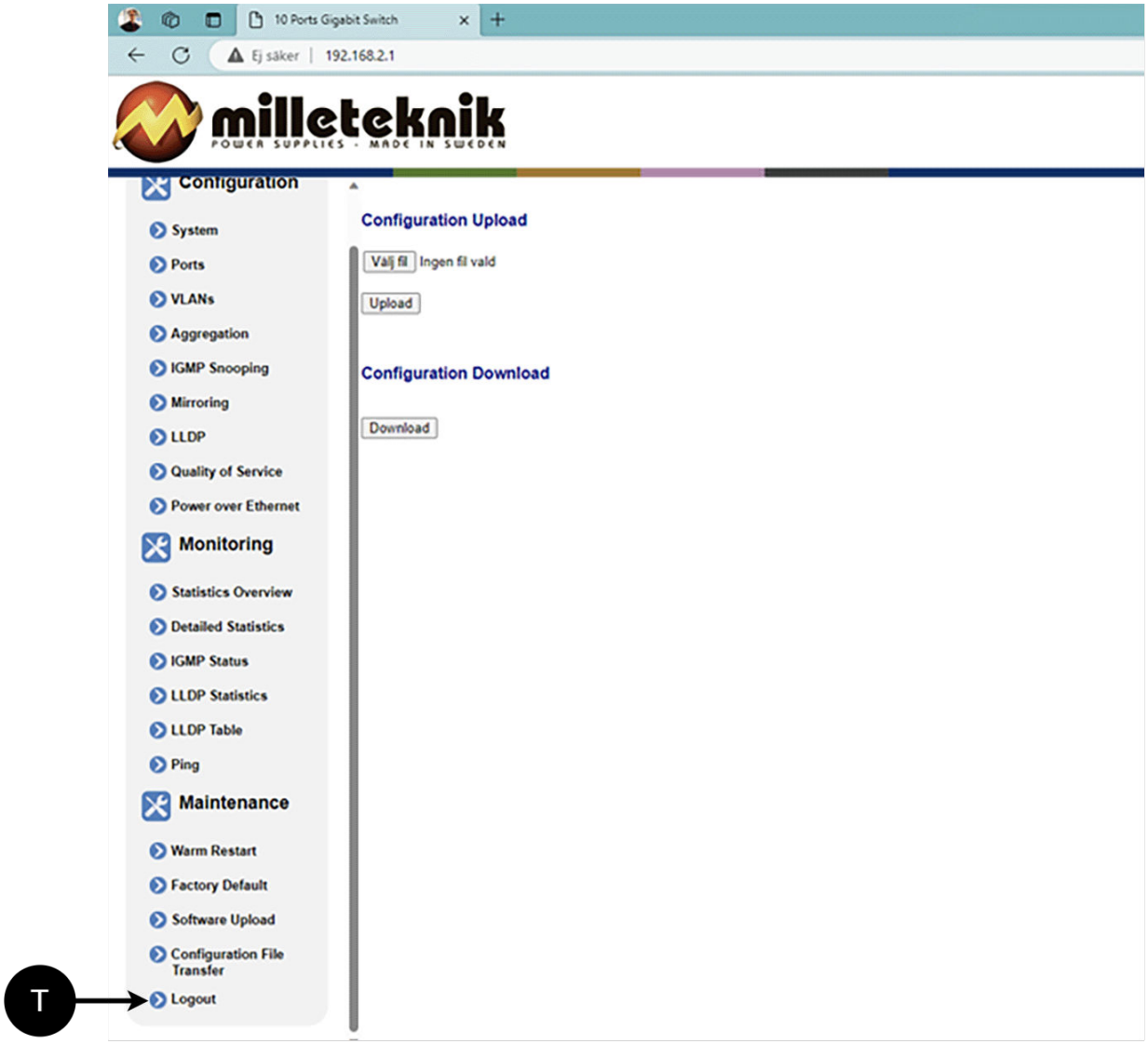


Table 28. Load and save configuration file.

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.

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Deployment - how to start the device

DANGER
Personal injury or death can occur if the device is connected to the mains or live when disassembling / moving.

1. Connect load.
2. Connect batteries.
3. Connect mains voltage.
4. Plug in mains voltage.

Maintenance

The system, with the exception of fans and batteries, is maintenance-free. Check fans annually. Fan should rotate smoothly without any noise. Clean the fan from dust and dirt. The fan should be replaced if it does not rotate smoothly or is so dirty that it cannot be completely cleaned. If the fan does not work well, the air flow in the unit will be obstructed, as a result of which heat will increase in the housing, it will lead to the deterioration of battery life and thus the replacement interval of batteries will be significantly shortened

Temperature Sensors

The device is equipped with a temperature sensor for measuring battery temperature that controls the fan that evens out the temperature in the housing. By limiting the internal temperature increase, the load on the batteries is reduced, which can increase their service life. For reference, battery life is halved at a temperature increase of 10 °C, making efficient heat management a critical factor for

Safety Information - Service and Troubleshooting

- If possible, disconnect the mains supply before starting any work, such as servicing, battery replacement, metering or troubleshooting.
- Remove the battery fuse/plug before working on the DC side.
- Check that all cables are properly connected and grounded before re-energizing the unit.
- The product may contain components that become hot during operation. Avoid touching internal parts immediately after the power has been switched off.
- If fuses blow repeatedly see Troubleshooting [27] or disconnect the unit and contact Milleteknik technical support.
- In case of suspicion of damage, liquid ingress or burnt odour, the product must not be used until it has been inspected by qualified personnel.
- During operation, the housing should be closed and locked (if the device has a lock).
- Only authorized service personnel may perform repairs on the device.
- Use only original fuses and batteries of the same type and value as specified in the manual/product sheet.

Milleteknik is not responsible for damage caused by improper handling, modification or unapproved components.

Troubleshooting

If the device does not work as expected, go through the following checks:

Table 29. Troubleshooting

Problem	Possible cause	Action
No output voltage.	No mains voltage, fuse triggered or battery failure.	Check the supply, fuses and battery connections.
Battery does not charge.	Faulty battery connection or battery fuse has blown.	Check battery cables and replace battery fuse if necessary.
The device starts but alarms.	Batteries not sufficiently charged or faulty load or battery.	Wait 72 hours until the batteries are fully charged. Ensure that the connected load does not exceed the rated current.
LED flashes.	Information, warning or error.	See panel or manual for explanation.

Problem	Possible cause	Action
Fuses blow frequently.	Short circuit or overload.	Check connected devices, change the fuse only after the cause has been resolved.
Unit overheating	High load or insufficient ventilation	Check that the rated current is not exceeded and ensure adequate ventilation around the enclosure.

Control measurement of batteries

In case of troubleshooting, the voltage of the batteries can be checked using a multimeter. Measure each 12V battery separately over the plus and minus pole. Next, measure the entire battery group connected in series. Two 12 V batteries connected in series should provide approximately 24-27 V DC depending on the degree of charge and whether charging is in progress. If measured voltage is significantly lower than expected, check polarity, battery fuse and wiring between battery box and battery backup.

If the problem persists after these checks, contact Milleteknik support and provide the product name, serial number, and a brief description of the fault.

Product sheet - power supply / battery backup

Product Sheet

PoE

Item Information

The table shows the name, part number and email number of the product

Product Identification

Table 30. Product designation, part number and email number.

Product designation	Article number	E-number (SE)
PoE Switch Managed 4p UT M	PL02P30024P050P-UTM	51 734 03

Technical description

PoE Switch Managed 4p UT M is a PoE managed switch with 4 pcs. PoE+ ports according to AT standard where all ports can deliver power at the same time. The unit holds 2 x 12 V 20 Ah batteries in a thermally insulated space with heating element and thermostat for reliable use in outdoor environments. The system logs temperature, current and voltage for real-time monitoring. The integrated managed switch provides remote access via VPN for control of ports (on/off) and display of current power. In addition to the PoE ports, there is a separate 24 V load output for external equipment with higher power requirements. The product is prepared for external 4G/5G router and can be supplemented

Table 31. Quick Facts

Quick Facts	
Supply voltage (V)	230V AC, +/- 10%, 47Hz- 63Hz
Voltage out (V)	27.3 V DC boosted to 54 V DC Also applicable in battery operation.
Current output (A), max load current output.	5A
Batteries[a.]	2 x 20 Ah

[a.]Recommended. If batteries are included, it is indicated, otherwise batteries are ordered separately

Areas of application

Table 32. Areas of application

Areas of application	Yes	No
PowerWatch compatible	✓	
IP camera, power supply.	✓	
Networked devices that can be powered by PoE.	✓	

Electrical data

Table 33. Electrical data

Electrical data	
Supply voltage	230V AC, +/- 10%, 47Hz- 63Hz
Charge current	Depending on the power outlet. Max 1 A
Efficiency[a.]	87%
Standby consumption	Data is missing.
Voltage out	27.3 V DC boosted to 54 V DC Also applicable in battery operation.
Current (A)[b.]	5A
Power (W)	30.8W per port

[a.]At rated load.

[b.]Power outlet/load is specified as max, normal current output should be 80% of max.

Table 34. Fuses

Fuses	
Mains fuse	2.5 A
Load fuses	T5A
Battery fuse	16A

Table 35. Printed circuit boards and Internal power consumption

Circuit Boards	Internal power consumption (during battery operation)	Other. info
4p Managed PoE Switch	Data is missing	
PRO3	< 120 mA	All relays on external alarm board pulled in normal mode.

Load outputs

Table 36. Load outputs

Load outputs	
Number of loading outputs	PoE switch can drive load to four PoE devices and motherboards can drive one (1) 24 V load output to power other applications.

Table 37. Total maximum load and recommended load.

Model	Recommended total load (80%)[a.]
5A	4 A

[a.]Typically, 70-80% of the maximum load is recommended in continuous operation, depending on the thermal margins of the product.

Table 38. POE outputs

POE outputs	
Number of PoE ports (RJ-45)	4
PoE budget	336 W

POE outputs	
POE Budget/Max Power Per Port	30.8 W.
Number of LAN ports	2
Network ports/interfaces, RJ-45	1000Mbps
Managed	Yes

Alarm and protection

Table 39. Number of relay on which alarm can be given

Number of Relays	Alarm on switching relay?[a.]
0	✗

[a.] Relay, alternating potential-free contacts.

Table 40. Alarm over communication and on LED on motherboard PRO3

Alarms	Alarm via communication[a.]	Indication diode on main board.
Network outage	✓	✓
Fuse failure	✓	✓
Sabotage Breakers	✓	✓
Fan failure	✓	
Charger failure, overvoltage	✓	✓
Charger failure, undervoltage	✓	✓
Cell failure or not connected battery	✓	✓
Low system voltage, (system voltage below 24.0 V in mains operation).	✓	✓
Low battery voltage (<24.0 V DC) or power failure	✓	✓
Over-temperature	✓	
Sub-temperature	✓	
Short battery life remaining	✓	
Aged battery	✓	✓
Overcurrent 80%, daily average	✓	
Overcurrent 100%, minute average	✓	
Over current 175%, second average	✓	

[a.] Applies to communication against the parent system, active only if configuration allows. PoE devices do not communicate with parent systems.

Table 41. Alarm and protection

Alarm and protection	Yes	No
Battery charge protection/controlled charging[a.]	✓ Batteries are charged with a maximum of 0.5 A.[b.]	
Deep discharge protection, see Battery [31][c.]	✓	
Overload Protection/Surge Protection	✓	
Over-temperature protection	✓	
Short circuit protection	✓	

[a.] Controlled charging protects and extends battery life.

[b.] Factory setting. Adjustable in PowerWatch

[c.] When the deep discharge protection is activated, the device turns off and the LED goes out.

Communication and Indications

Table 42. Communication and Indications

Communication and Indications	Yes	No	Other. info.
Communication	✓	✗	
RJ-45	✓		Refer to manual for alarms that PoE switch can provide.
Port control via connected computer	✓		
PowerWatch[a.]	✓		
Indicators/LEDs	✓		LED on circuit board.

[a.] PowerWatch consists of a cable and software, it is ordered separately.

Battery

Table 43. Technical data - Batteries

Battery	
Ref. Batteries[a.]	2 x 20 Ah
Battery type	Maintenance-free AGM (lead-acid) batteries
Deep discharge protection	Activates when the system voltage drops below about 20 V DC.

[a.] If batteries are included, it is indicated, otherwise batteries are ordered separately.

Enclosure and Mechanics

Table 44. Enclosure and Mechanics

Enclosure and Mechanics	
Type	Pole
IP class	IP65
Material	Fiberglass Reinforced Acrylic Plastic
Colour	Beige
Cable grommets	10 pcs
Lock	✗ Locks are available as an option.
Fan in enclosure	✓

Assembly, installation and eligibility requirements

Table 45. Fitting

Fitting	Yes	No
Pole.	✓	

Table 46. Installation

Installation	Yes	No
Fixed installation.	✓	

Dimensions, weight and packaging information

Table 47. Dimensions

Dimensions, (WxHxD).	Dimensions with packaging[a.]
486 x 530 x 286 mm	550 x 500 x 300 mm

[a.] Dimensions (WxHxD) of product and packaging may differ, this is because the product may be oriented differently in the package.

Table 48. Weight

Net weight	Weight with packaging
14.3 kg	14.5 kg

Table 49. Packaging

Packaging	
Packaging	Cardboard and plastic shock protection.
Quantity in pack	1 pc.
Packaging Type (GS1 T0137)	BX box.
Conditions EUR pallet	EUR pallets may not be stacked during transport or storage. Stacking may result in damage to product and packaging
Transport environment	The product must be protected from condensation and direct precipitation during transportation.
Transport temperature (without battery)	−30 °C to +70 °C
Storage environment	Dry indoor environment, protected from condensation. Relative humidity: max 95%, non-condensing
Storage temperature without batteries	−20 °C to +60 °C

The accessories fits in

Table 50. The option fits the following enclosures

Accessories	Enclosure

Contact

Table 51. Contact

Department	
Switchboard	031-340 02 30
Support and technical issues	support@milleteknik.se
Sales	sales@milleteknik.se
WWW	www.milleteknik.se
Address	Ögärdesvägen 8B, 433 30 Partille

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Compliance and regulatory compliance

Delivery time, warranty and terms

Table 52. Delivery time, warranty and terms

Delivery time, warranty and terms	
Warranty period[a.]	The product has a two (2) year warranty against manufacturing defects.
Special warranty conditions	Batteries and wear parts are not covered by warranty. See also general terms and conditions.
General Terms and Conditions	ALEM09 with exceptions, see: www.milleteknik.se/conditions/
Support	Telephone support and email support during the warranty period are free of charge. For spare parts that are not covered by warranty, there is a charge
Delivery and stock	
Delivery time[b.]	10 working days. Or as per agreement. Delivery from factory, transportation time is added.

[a.] If the device is purchased through a wholesaler or other supplier, other warranty conditions may apply

[b.] In the case of larger orders, delivery time increases, acc. to agreement.

Operation and maintenance

Table 53. Operation

Operation	Data	Other. info
Environment	Outdoor Class 3.	
Operating temperature (permissible) [a.]	-25°C to +50°C	Class 3 according to EN 50131-6/ EN 60839-11
Load, power supply	80%	Average load shall not exceed 80% of the rated capacity of the power supply.
Ventilation, free distance around the enclosure.	100 mm	Ventilation openings must not be blocked or covered.

[a.] Specifies the permissible ambient temperature range in which the product can operate without damage. See also table on battery life.

Table 54. Maintenance

Yes	No	Interval	Other. info
✓		Annually	The fan should be cleaned annually. Battery terminal voltage must be measured. Ensure that the average load does not exceed 80% of the rated capacity of the power supply.

Certifications and approvals

Table 55. Approved according to

Complies with	Directives
PoE	IEEE 802.3af, IEEE 802.3at/30.8 W up to type2, class 4.
Emissions	
Immunity	EN61000-6-2:2005, EN61000-4-2, -3, 4, -5, -6, -11 SS-EN 50130-4:2011 Edition 2, EN50131-6
C.E.	CE marking according to (EC) 765/2008
EMC	EMC Directive 2014/30EU
Electric (LVD)	Low Voltage Directive: 2014/35/EU

Environmental data

Table 56. Environmental data

Environmental data	J/N	Informaţie	Other. info.
Building Product Declaration (BPD)	✓	Yes, see iBvd at www.milleteknik.se.	-
REACH Information Obligation (EC) No 1907/2006	✓	Yes, see the DoC at www.milleteknik.se The product complies with REACH Regulation (EC) No 1907/2006.	If empty, the product is not covered.
SVHC substances, CAS/EC	✓	Yes, lead, 7439-92-1/231-100-4	For text, see iBvd at www.milleteknik.se. If blank, substance is missing.
Subject to the RoHS Directive, (EU) 2015/863)	✓	Yes, see the DoC at www.milleteknik.se	
WEEE 2012/19/EU	✓	The product contains electrical components or wiring and is covered by the WEEE Directive (2012/19/EU).	If empty, the product is not covered. End-of-life products must be returned to a recycling centre
Battery Regulation (EU) 2023/1542	✗		
SCIP No 2008/98/EC	✓	Yes, registered under the EU Waste Directive where applicable, (2008/98/EC).	If empty, no SCIP number is needed.
Conflict minerals (EU) 2017/821	✗/✗/✗/✗/✓	No=Gold, Tungsten, Tantalum, Cobalt. Yes=Tin	Tin in solders in printed circuit boards purchased through a Swedish supplier.
Contains nanomaterials: EC 1272/2008	✗	The product does not contain nanomaterials.	
Ecodesign 2009/125/EC	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[a.], where applicable, to provide our customers with confidence in their choice.		
Machine Directive 2006/42/EC	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). Will be replaced by Machinery Regulation (EU) 2023/1230, which will apply in 2027.		
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.[b.]Contact your distributor for more information.			

[a.]Standby consumption and power.

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

CE

Manufacturer and country of origin

Table 57. Manufacturer and country of origin

Manufacturer[a.]	Milleteknik AB
Customs State. Nos.	85044095[b.]

Country of origin	Sweden

[a.]Manufacturer is the trademark indicated on the product, regardless of what is stated in this product sheet.

[b.]Verify with the Customs Ombud/Customs Service for export/import; alternative classification 85044055 may become applicable if the product is assessed as a battery charger.

Appendix

Eligibility requirements, installation

Eligibility requirements vary between countries. The table summarizes national requirements for fixed installation and connection of equipment with a plug socket, respectively.

Options on the secondary side of the product, such as 12 V, 24 V or 48 V DC, are connected according to the respective instructions. Work on the network connection of the product shall be carried out in accordance with national eligibility requirements

Table 58. Eligibility requirements by country. Applies only to the installation of this product in a fixed network connection

Permission Requirements for Installation	Fixed installation (230 V)	Plug	Other. info
Sweden	✓	✗	Fixed installation may be performed by technicians but shall be under the responsibility of a qualified installer. (Electrical Safety Act, SS 436 40 00) Plug may be connected without authorization.
Norway	✓	✓	Requirements for qualified electricians also for equipment with a plug socket in fixed installations. (NEK 400, DSB
Finland	✓	✗	Plug may be connected without authorization. (Tukes, SFS 6000
Denmark	✓	✗	Plug may be connected without authorization. (Safety Board
Germany	✓	✗	All fixed installations require a qualified electrician according to VDE 0100. Plug sockets may be connected without authorization, but only by person with basic electrical knowledge (“Elektrotechnisch unterwiesene Person”)

Reference table: environmental classes according to EN 50130-5 (referred to in EN 50131-6)

Table 59. Reference table: environmental classes according to EN 50130-5 (referred to in EN 50131-6)

Class	Type	Temperature range
Environmental Class 1	Heated indoors (type office/residence).	+5°C to +40°C
Environmental Class 2	Generally indoors (type warehouses/stairwells, not temperature controlled).	-10°C to +40°C
Environmental class 3	Protected outdoors.	-25°C to +50°C
Environmental class 4	Generally outdoors.	-25°C to +60°C

Miscellaneous

Reference table: manufacturer's stated service life and recommended battery replacement

Table 60. Reference table: manufacturer's stated service life and recommended battery replacement

Battery Type (Design Life)[a.]	Battery replacement time in normal operation, +20°C.	Replacement during hot operation, +30°C	Replacement during hot operation, +40°C
3 - 5 years	2 - 3 years	1 - 1.5 years	0.5 - 0.75 years
6 - 9 years	5 - 6 years	2.5 - 3 years	1.2 - 1.5 years
10 - 12 years	6 - 7 years	3 - 3.5 years	1.5 - 1.75 years
15 + years	10 - 12 years	5 - 6 years	2.5 - 3 years

[a.]Valid in case of completely unused battery stored under optimal conditions.

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