

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.

Instruction manual in Swedish in original¹.

SUPPORT

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

350-251 \$ {/d:article [1]/@xml:lang} \$

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](#).

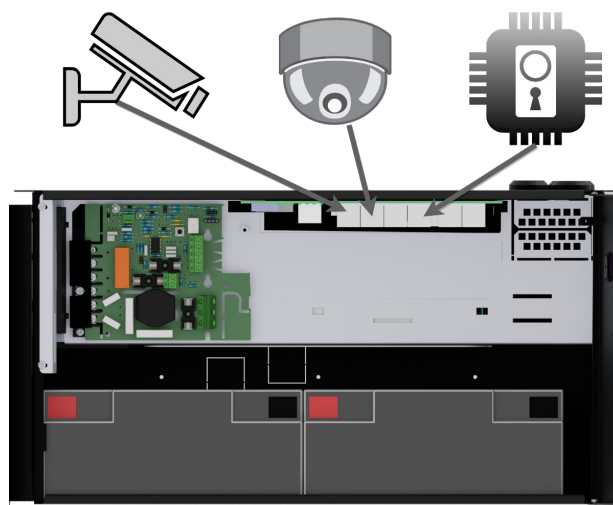
ABOUT POE FROM MILLETEKNIK

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.

¹Translations in languages other than Swedish are only indicative and have not been verified. Translation must always be checked against the Swedish original to ensure correct information.

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



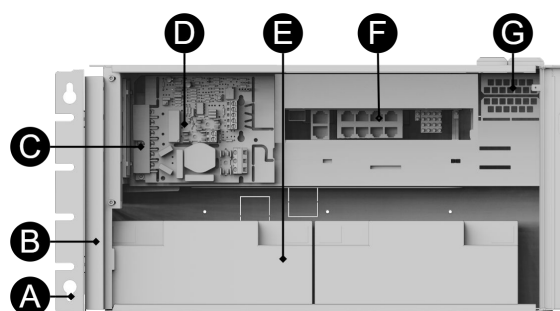
PoE can power, for example, surveillance cameras.

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

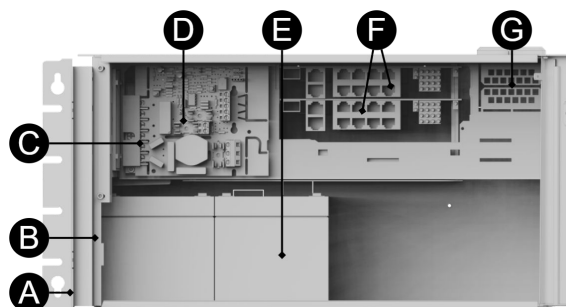
Connect other devices that do not need to be power supplied in LAN ports.

COMPONENT OVERVIEW POE FLX M

PoE M-switch 8p FLX M



PoE M-switch 16p FLX M

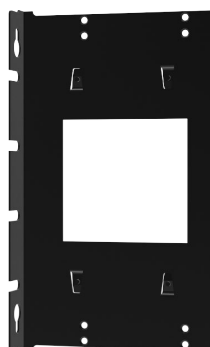


Component overview

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.

CONSOLE FOR FLX M AND FLX L

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



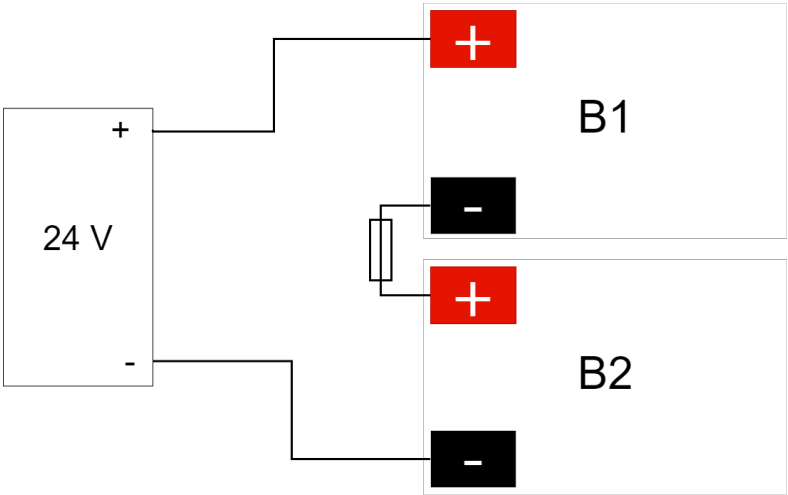
BATTERIES - PLACEMENT AND CONNECTION

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.

Wiring diagram for batteries in battery backup

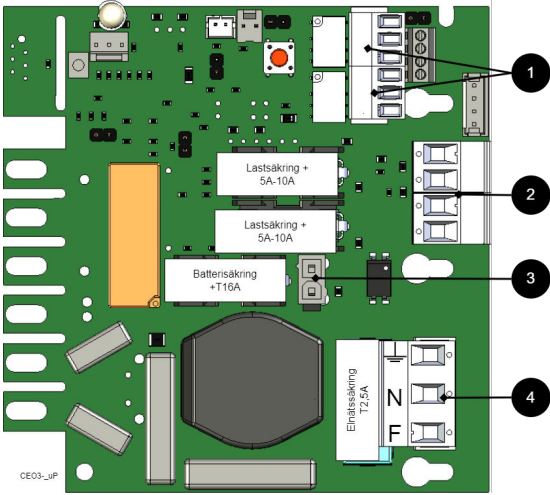


Connect the terminals correctly so that you do not damage the equipment.

MOTHERBOARD DESCRIPTION

Connect in this order

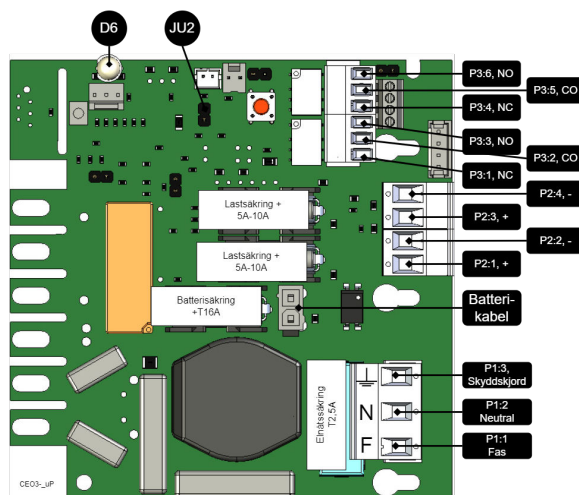
To minimize the risk of errors that may occur in connection with a short circuit, connections to the motherboard must be made in this order.



Connect in this order

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

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

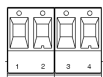
Alarm is connected to terminal P3

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



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 [nameplate](#) 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 mm²

Connect mains

Pull wiring through the cable entry on the cabinet.

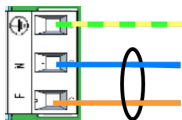
If possible, secure the mains cable with cable ties where possible.



IMPORTANT

[sv] Elnätskablage skall hållas åtskilt annat kablage för att undvika EMC-störningar.

Connect the mains to the motherboard



Connect the mains cable to the terminal before it is put back on the motherboard. Secure F and N with cable ties for electrical safety.

Electrical network connections

Letter	Explanation
F	Phase
N	Neutral
PE	Protective earth



ELECTRICAL MAINS CONNECTION 230 V AC ON CIRCUIT BOARD

Check that the marking on the circuit board matches the cable arrangement on the terminal block.

Control alarm limit

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

Low battery voltage alarm limit

Low battery voltage alarm limit	JU2 with jumper ^a	JU2 without jumper
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^aThe unit is delivered with jumper on JU2

Fuses

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

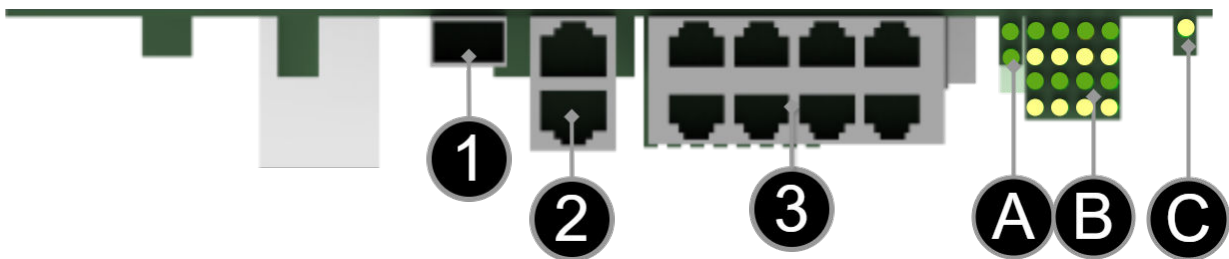
Product	PoE switch installed	Can additional PoE switches be installed?
PoE M-switch 8p FLX M	An eight port PoE Switch	No, use PoE M-switch 16p FLX M.
PoE M-switch 16p FLX M	Two eight-port PoE switches	No.

SHORT DESCRIPTION FOR POE SWITCH 4P



NOTE

The PoE M-Switch 16p FLX M has two 8 port cards installed.



[sv] Notera att bilden kan vara vänd

Short description

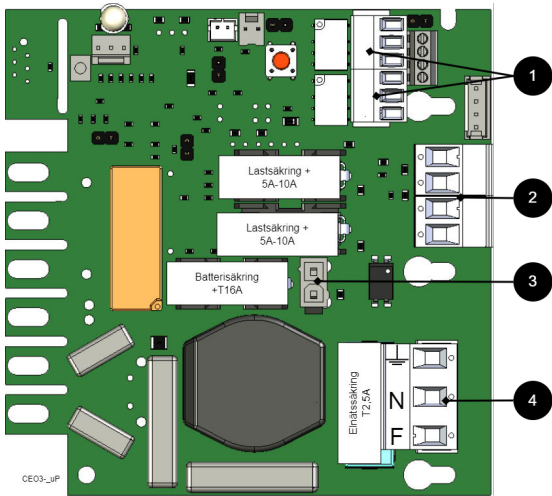
No./Letter	Explanation
1	SFP-port.
2	2 pcs. RJ-45 ports for data, not PoE, (not powered).
3	8 pcs. RJ-45 powered ports for connecting PoE devices.

No./Letter	Explanation
A	Indication, green LED lights up when external PoE is connected. This is only an indication that the port is connected and not the status of the connected device. Illuminates yellow during data transfer.
B	Indication, yellow LED lights up when PoE device is plugged in. This is only an indication that the port is connected and not the status of the connected device. Lights up green when data is being transferred.
C	Lights up green when the card has voltage.

COMMISSIONING - HOW TO START THE UNIT

Connect in this order

To minimize the risk of errors that may occur in connection with a short circuit, connections to the motherboard must be made in this order.



Connect in this order

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

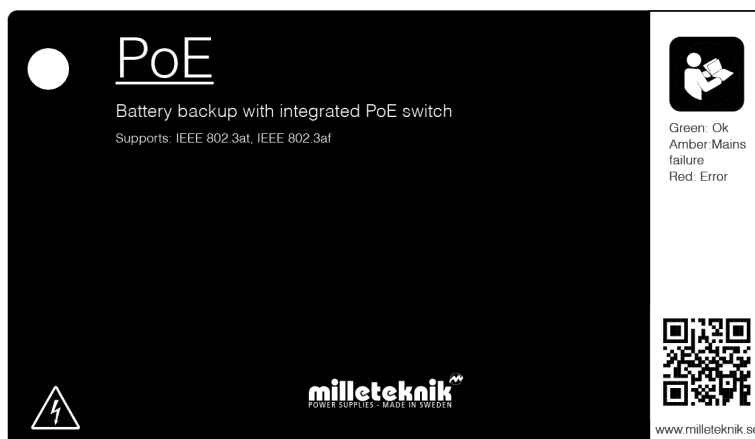
1. Connect batteries.
2. Connect fuses.
3. Plug in PoE and other loads.
4. Screw the mains cable into the terminal and attach the terminal to the motherboard.
5. Switch on mains voltage.

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 before the batteries are fully charged.

ALARM DISPLAYED ON CABINET DOOR

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



The indicator diode shows.

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

When operating system: If the indicator LED is off, deep discharge protection has come into force.



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

PoE Switch 4p FLX M



PoE switch with 8 PoE ports.

PoE switch with 16 PoE ports.

NAME, ARTICLE NUMBER AND E-NUMBER

Name, article number and email number.

Name	Article number	E-number (SV)
PoE Switch 8p FLX M	FM01N10224P01008PM	51 728 97
PoE Switch 16p FLX M	FM01N10224P01016PM	51 728 98

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.

1 Gb ports.

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.

Self-consumption

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

Voltage out: 27.3 VDC, (24 V).

Charging current: 10 A. 13.5 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.

Alarms are given for: Delayed mains failure alarm or low battery voltage, disconnected batteries at start-up and fuse failure.

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 (8p): 10A. Fuse on load output: 10 A. Fuse on supply to PoE switch (16p): 13.5 A.

Battery fuse: 30 A.

INDICATIONS AND COMMUNICATION

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

PoE power supply can not as an option, communicate via protocol (RS-485/I²C) against UC. (ASSA ABLOY, RCO, Sentrion, Unison, Bravida, Vanderbilt/ACRE and Tidomat - this can only be set from the factory and cannot be changed by users or technicians).

BATTERY AND BATTERY TYPE

Battery type: 12 V, AGM lead-acid battery, maintenance-free. Battery sizes must not be mixed.².

PoE M-switch 8p FLX M: two 20 Ah batteries.

PoE M-switch 16p FLX M: two 14 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.

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

^aDimensions of product and packaging may differ, this is because the product may lie differently in the packaging.

Height units, fan and IP class.

HE	Built-in fan	IP class
5	Yes	IP32

WEIGHT

Weight.

Name	Net weight	Weight incl. packaging
PoE M- switch 16p FLX M	8.2 kg	8.95 kg
PoE M- switch 8p FLX M	8 kg	8.75 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

The product meets the following requirements.

EMC:	EMC Directive 2014 / 30EU
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²The 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.

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:	CE directive according to: 765/2008



NOTE

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).



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.³Contact 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.

³Costs incurred in connection with recycling are not reimbursed.

Name	Dimensions	Batteries that fit	Link
PoE M Switch 8p FLX M	224 x 437 x 212 mm	4 pieces 20 Ah.	
PoE M-switch 16p FLX M	224 x 437 x 212 mm	4 pieces 14 Ah.	

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

MISCELLANEOUS

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

Max power PoE.

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

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

ABOUT THIS INFORMATION

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

Publication date 2025-04-29

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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350-251 \$ {/d:article [1]/@xml:lang} \$