

Ewon Cosy+

INSTALLATION GUIDE

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Important User Information

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1 Preface

1.1 About This Document

The present Installation Guide describes the hardware of the Ewon Cosy+ which is an industrial gateway / router fully compatible with the [Talk2M cloud connectivity services](#).

For additional related documentation and file downloads, please visit www.ewon.biz/support.

1.2 Document History

Version	Date	Description
1.0	2020-01-08	First release
1.1	2022-06-25	Temperature specification update

1.3 Related Documents

Document	Author	Document ID
eBuddy	HMS	AUG-0063-00
Connect an Ewon device to Talk2M	HMS	AUG-0089-00
General Reference Guide for Cosy+	HMS	RG-0011-00

1.4 Trademark Information

Ewon® is a registered trademark of HMS Industrial Networks SA. All other trademarks mentioned in this document are the property of their respective holders.

2 Product Summary

2.1 Concept of the Ewon Cosy+

There is a single model of the Ewon Cosy+ proposing the following communication media:

- Ewon Cosy+ with 4 port Ethernet switch (4 * RJ45: 1 LAN and 3 WAN/LAN)

2.2 Hardware General Specification

Characteristic	Value
Design	Industrial design: 24 VDC power supply, DIN Rail mounting, extended temperature (-25° C to +60°C)
Clock	Backed up real time clock (RTC) Backup battery lifetime has 10 years expectancy
Ethernet Interface	LAN Ethernet port 10 / 100 Mbps
Digital Input	2
Digital Output	1
Mounting	Latch for DIN rail EN50022-compliant

2.3 Typical Applications

The Ewon Cosy+ can be used

- for remote access of Ethernet and / or USB devices using Talk2M connection
- as an industrial VPN router

The Ewon Cosy+ should **not** be used

- as a pure Ethernet switch

2.4 Type & Part Numbers

The Ewon Cosy+ is tagged following these part numbers:

Part number	Type	Description
EC71330_00MA	Ewon Cosy+	LAN / WAN – 4 Ethernet ports only

The part number syntax is explained in details in the [Label, p. 11](#) section.



*The **MA** at the end of the part number stands for “Multiple languages A” which regroups English, French, German, Italian and Spanish.*

3 Safety, Environmental & Regulatory Information

3.1 Scope

This chapter addresses safety, environmental & regulatory information for the Ewon Cosy+.

3.2 Power Supply

The external power supply is a third party device that is not part of this certification.

The equipment should be supplied from external, separately provided power supply 12-24Vdc, 30W min., certified for 60°C and for altitudes up to 2000m. Power supply should be separately certified according to UL/IEC 62368-1 with ES1, PS2 output (for more information, refer to [Specification of the External Power Supply, p. 20](#)).

3.3 Applicable Directives, Standards and Compliance

The product described in the present Installation Guide complies with the CE and the FCC regulations.

For all documents related to certifications such as CE Declaration of conformity, FCC declaration of conformity, UL/CB certificate and EC Type Examination certificate, please refer to the [Ewon website](#).

3.4 Field Implementation & Environmental Conditions

3.4.1 General Restriction

This equipment is not suitable for use in locations where children are likely to be present.

3.4.2 Ingress Protection

The Ewon Cosy+ has an IP20 protection grade.

Therefore, the Ewon Cosy+ is **NOT** suited for outdoor mounting. It has to be integrated in an electrical cabinet, protected from excessive heat, humidity and dust.

Do not push any sharp object into the air vents or openings of the equipment.

3.4.3 Mounting Recommendations

The product is intended to be mounted vertically, label on the right side.

The normal mounting position of the Ewon Cosy+ is to be mounted on a horizontal [Omega type DIN-rail \(EN 50022\)](#).

- **Mounting the unit on DIN-rail**

Pull the slide lock (located at the bottom of the back-side of the unit) downwards and present the unit in front of the DIN rail. Tilt the Cosy+ upwards in order to hang it on the upper edge of the DIN rail by its hook. Gently tilt the unit downwards until it finds its original position. Pull the slide lock upwards to fix and lock the unit on the DIN rail.

- **Removing the unit from DIN-rail**

Release the unit by pulling the slide lock downwards while gently tilting the unit upwards. Free the unit by unhooking it from the upper rail edge.

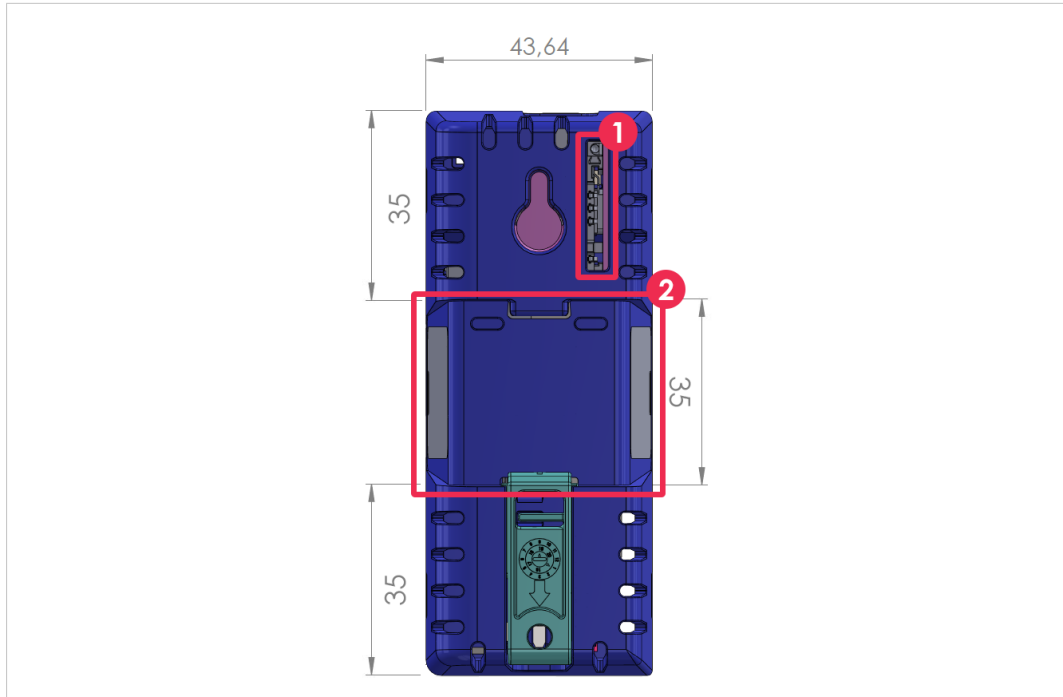


Fig. 1 DIN rail mounting position (

#	Description
1	SIM card slot
2	DIN rail mounting bracket

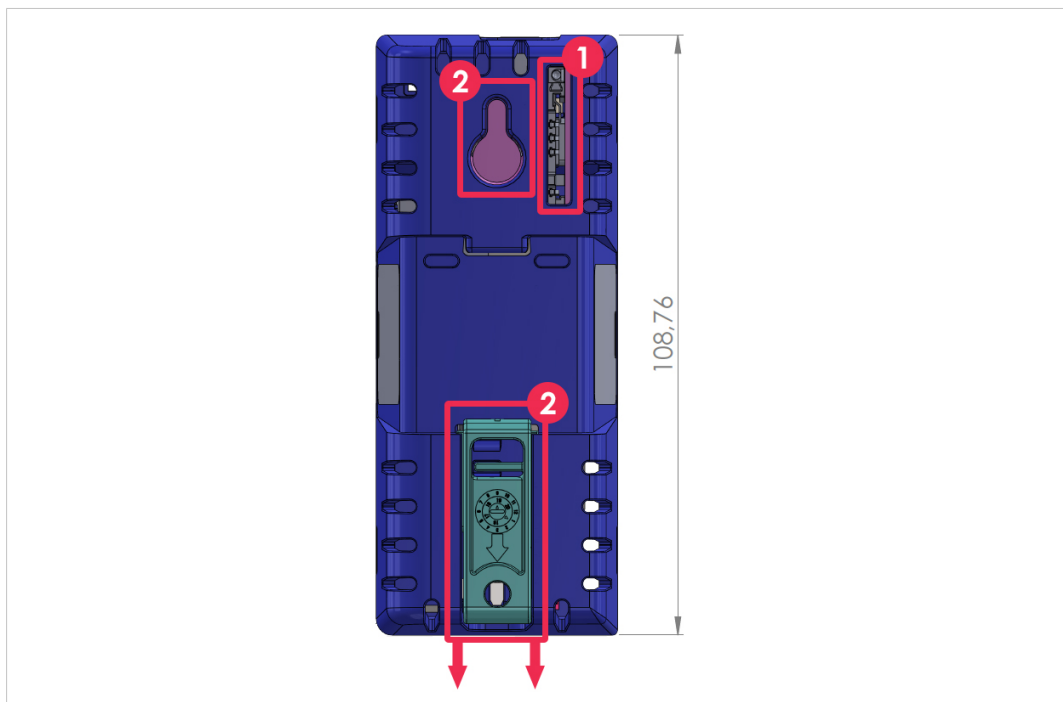


Fig. 2 Wall mounting position

#	Description
1	SIM card slot
2	Wall mounting bracket (suggested screw dimensions 4,2 x 32 mm)

**Caution**

Please set the screws in both wall mounting brackets to prevent accidents

To ensure a proper ventilation of the equipment, a free gap of at least 2 cm must be respected in front of all upper & lower ventilation openings of the unit.

A free gap of at least 1 cm must be respected on each side of the unit.

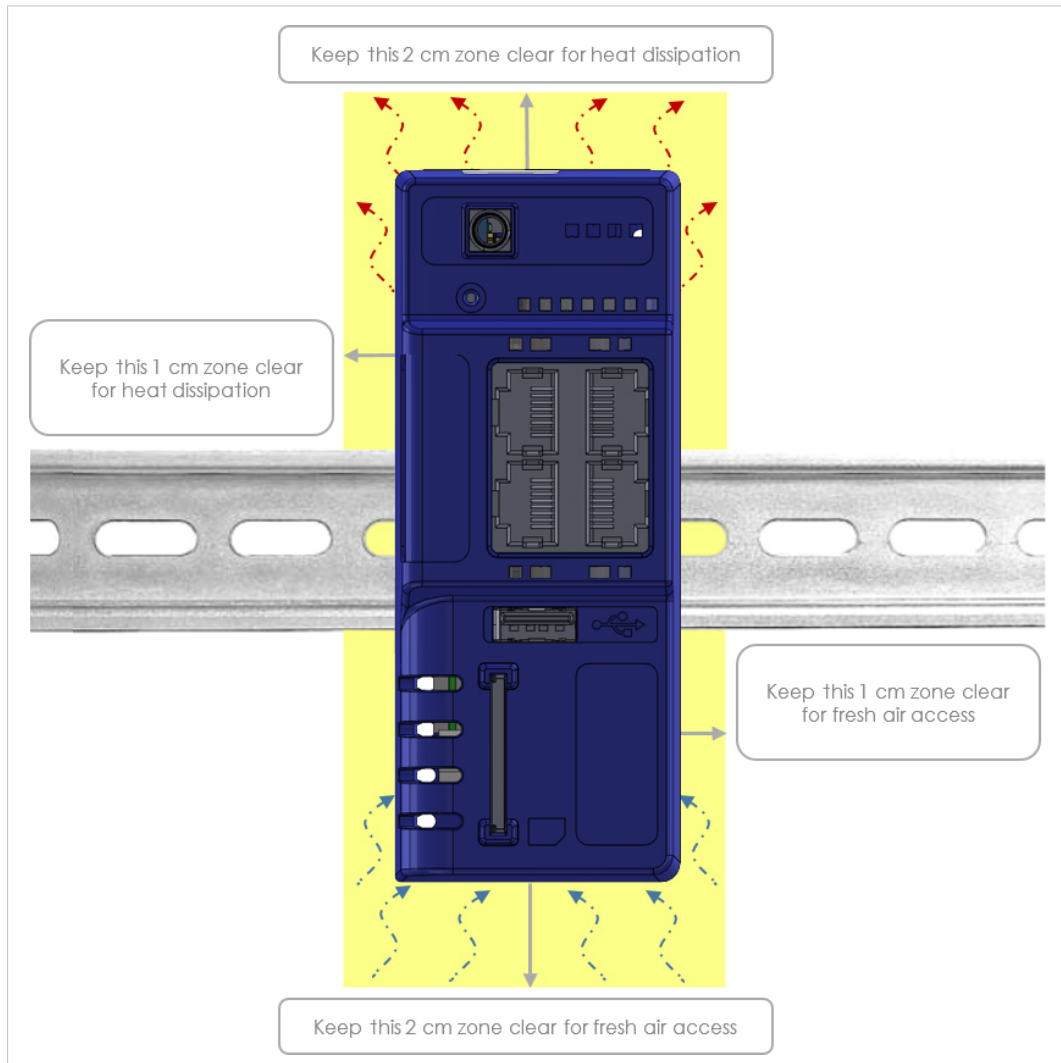


Fig. 3 Free gap surrounding the Ewon Cosy+ for heat dissipation.

3.4.4 Mechanical Dimensions

All units are expressed in millimeters — mm, and are rounded up.

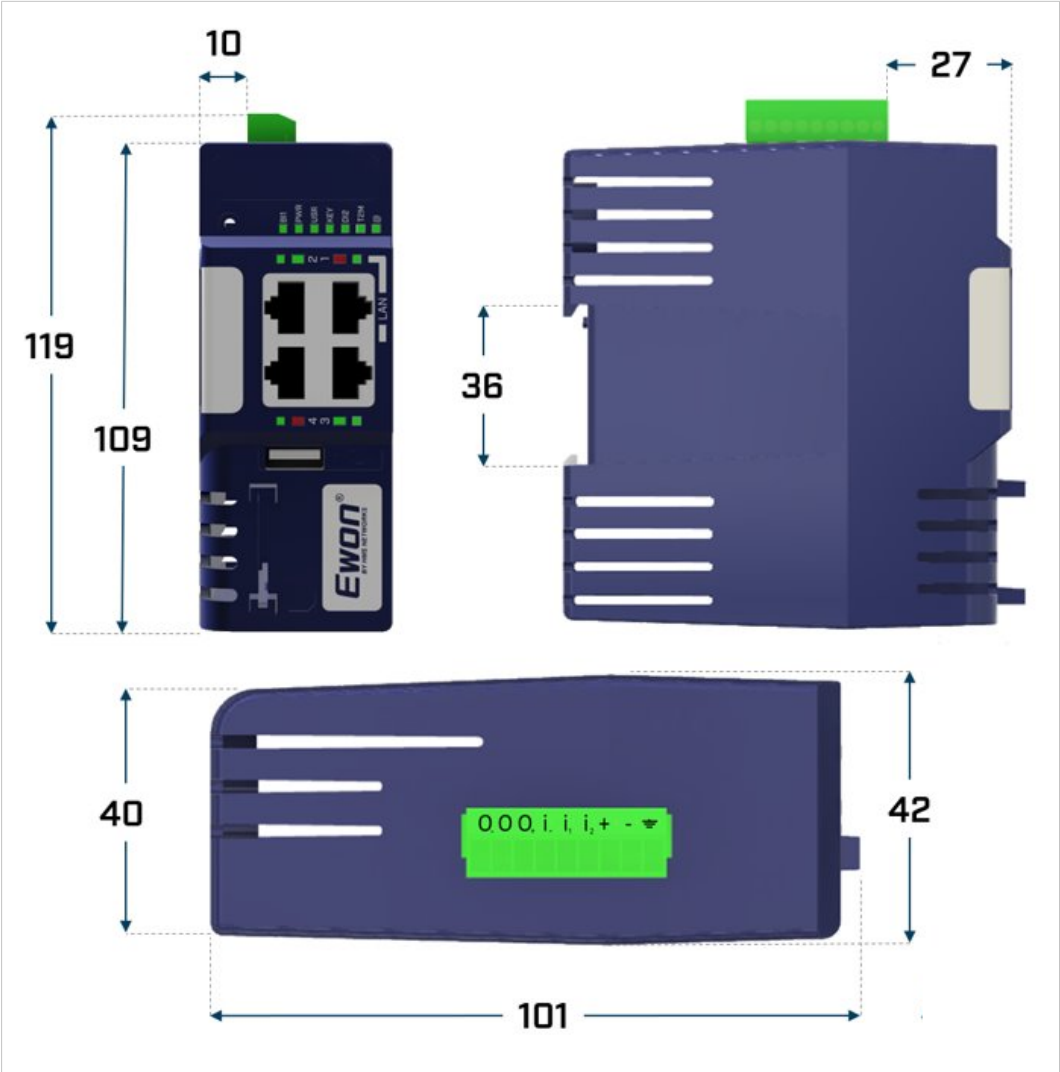


Fig. 4 Mechanical dimensions of the Ewon Cosy+

3.4.5 Cabling Rules

Shielded cables must be used for Ethernet and USB connectivity to comply with the EMC requirements.

USB cable must be:

- Shorter than 3m
- USB 2.0 type A (on Ewon Cosy+ side)
- Minimum current per contact : 0.5A (or better)



Caution

To prevent accidentally pulling out wires, be sure that cables are firmly attached to wire connectors. For screw connectors, make sure that screws are properly tightened as well as routing the equipment wires separately from other high voltage wires.

3.4.6 Environmental Conditions

The equipment operates properly within the following environmental limits if it has been correctly mounted according to the above mentioned recommendations:

Operating Temperature	-25°C to +60°C
Relative Humidity	10 to 95% non-condensing
Operating Altitude	Up to maximum 2000m
Storage Temperature	-30°C to +70°C
Storage Humidity	10 to 95% non-condensing
Storage Altitude	Up to maximum 3000m



In any other mounting position than the one explained above, the specified operating temperature has to be derated to -25°C to +40°C.

3.4.7 Earthing

Earthing the Cosy+ is necessary to eliminate unwanted transients and to conform to the EMC requirements. Therefore, a functional earth (FE) terminal is available on the main connector as shown in [Specification of the External Power Supply, p. 20](#).

Connect this terminal directly to allow impedance ground. Shielded cables have to be used for Ethernet and USB to comply with the EMC requirements.

3.5 Internal Battery

The Ewon Cosy+ contains a CR2032 battery. This battery is used to maintain the real time clock up-to-date even when the unit is not powered.

Here is a list of risks and recommendations regarding the battery:

- Risk of explosion if the battery is replaced by an incorrect type. The battery is not intended to be replaced by the consumer: the product shall be returned to the manufacturer for replacement.
- Do not ingest battery, chemical burn hazard.

-
- Keep new and used batteries away from children.
 - If the cell battery is swallowed, it can cause several internal burns in just 2 hours and can lead to death.
 - If the equipment's enclosure do not close securely, stop using the product and keep it away from children.
 - If you think batteries might have been swallowed or placed inside any part of the body, seek immediate medical attention.

4 Hardware Description

4.1 Label

The identification label of the Ewon Cosy+ is placed on the right hand side of the housing. The different parts of the label are described hereunder:

Label	Description
PN	Part Number (see syntax table below)
SN	Serial Number in the form: YYWW-SSSS-PP <ul style="list-style-type: none"> YY : Year of production WW : Week of production SSSS : Sequential manufacturing order PP : Product type
MAC	MAC address of the Ethernet adapter
Rating	Power supply requirements
Marks	CE, UL... logos if applicable

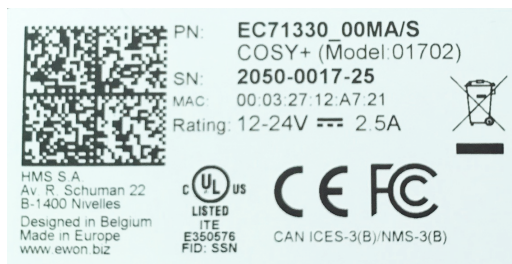


Fig. 5 Ewon Cosy+ — 4 ports Ethernet: Label

The applicable marks on the Ewon Cosy+ are the following:

Marks	Description
	Conformité Européenne or European Conformity (EC)
	UL Listed — Underwriters Laboratories
	FCC — Federal Communications Commission

The label can have variant marks depending on the model of the Cosy+.



Ewon Cosy+ — Ethernet label

The following tables explain the Part Number syntax:

EC7133m_ccLL[suffix]			
Position(s)	Description	Acceptable values	
EC	Name of product family	EC for Ewon Cosy+	
7	Number corresponding to the hardware platform	7	Cosy+ platform
1	Communication options 1	1	1 Ethernet
3	Communication options 2	3	3 Ethernet
3	Field communication option	3	USB

EC7133m_ccLL[suffix] (continued)

Position(s)	Description	Acceptable values	
m	Modem communication option	0	No modem
cc	Contains one or more characters (digits and/or letters)	00 = no software option	
LL	Defines the firmware language	MA	Regroups EN, FR, DE, ES and IT
[suffix]	Optional “ / ” character Defines the compliances of the unit	S	compliance with the UL / IEC / EN 60950 standard

Cosy+ (Model: XXXXX)

Label	Description
Cosy+	The device is labeled as Ewon Cosy+
Model: XXXXX	A unique hardware identifier of the product for certification purposes

4.2 Overall Description

4.2.1 Front

#	Description
1	Reset button
2	Status LEDs
3	LAN / WAN Ethernet ports and corresponding status LEDs (Orange: WAN and Green: LAN)
4	USB slot
5	SD card slot

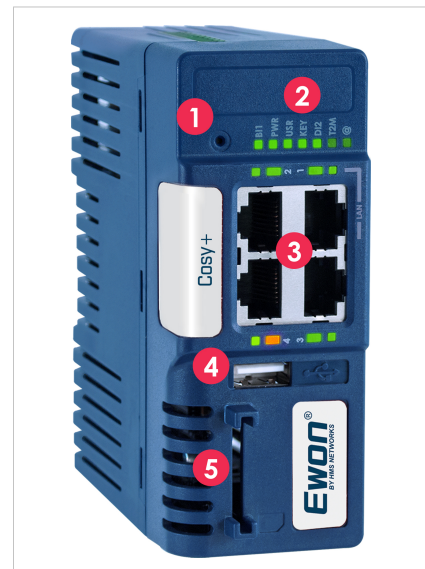


Fig. 6 Front panel

4.2.2 Upper Side

#	Description
1	Main connector including power input terminal, 1 DO and 2 DI

For more information about the connector, refer to [Main Connector, p. 19](#)

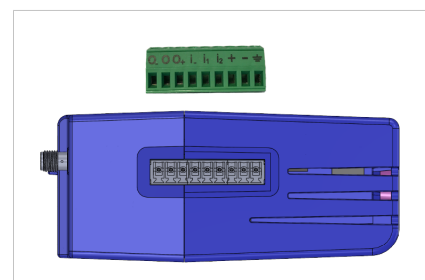


Fig. 7 Main connector and associated plug

4.2.3 Status LED

All Versions

Label	Description
BI1	Button BI1 input Steady green = reset button is being pressed
PWR	Power Steady green = unit is powered on
USR	User Blinking green slowly = Unit is ok Orange pattern = special attention required
KEY	Digital IN 1 See Digital Output & Digital Inputs, p. 21 Green = ON : Signal on Input 1 detected
DI2	Digital IN 2 See Digital Output & Digital Inputs, p. 21 Green = ON : Signal on Input 2 detected
T2M	Talk2M See Digital Output & Digital Inputs, p. 21 Green = ON : Talk2M VPN connection established Blinking green = A user is connected to this Ewon Cosy+ through Talk2M (= active remote connection)
@	Internet Steady green = Internet is configured on the Ewon Cosy+



Fig. 8 Status LEDs representation — All versions

4.3 LAN Switch Specifications

4.3.1 Boot Process

After powering on or requesting a reboot of the Ewon Cosy+, a wait is required to get the LAN switch feature fully operational (approximately 2 to 4sec).



The Cosy+ should **not** be used as a pure Ethernet switch as very short interruptions of the switch interface need to be taken into consideration.



The ultimate decision the Cosy+ takes when it can no more run a configuration is to reboot itself. This aims at restoring the requested communication channels and being consistent with the requested configuration.

4.3.2 LAN Switch Configuration

At the very first boot or after a reset level 2, the Ethernet ports scheme will be configured as follows:

- Port #1 : LAN
- Port #2 : LAN
- Port #3 : LAN
- Port #4 : WAN

The Ethernet ports functionality can be configured as wanted except for the port #1 which always remains in LAN mode.



Ethernet port #1 must be used for maintenance operation (such as update).

5 IP Address & Access to the Web Configuration

5.1 Factory Default IP Settings

Characteristics	Values
LAN IP address	10.0.0.53
LAN subnet mask	255.255.255.0
Gateway	0.0.0.0



The WAN IP address is set by default in DHCP mode.

5.2 Powering On

Power on the unit and wait approximately 2 minutes until the boot process is completed.

After a successful boot process the **USR** LED is blinking green slowly.

If the **USR** LED is blinking red according to a given pattern, it indicates that the boot process was interrupted due to a problem. The most frequent problem is :

- a duplicate IP address was detected on the LAN network: **USR** LED blinking pattern is red 1x short, 1x long

For other error LED patterns, please refer to the General Reference Guide for Cosy+ from the [Related Documents, p. 3](#).

5.3 Connecting to the LAN IP Address

Establish the first communication with the Ewon Cosy+ by using Ewon Cosy+ companion tool **eBuddy** which can be downloaded from www.ewon.biz/support.

Connect a LAN port (port #1 is always set as a LAN port) of the Ewon Cosy+ to one's computer either through a point-to-point connection or a network where there is no risk Cosy+'s default IP address (10.0.0.53) would conflict with another connected device.

5.4 Ewon Cosy+ Web Interface

While the computer is connected to a LAN port of the Ewon Cosy+, open an Internet browser and reach the Ewon Cosy+ web server whose URL is the LAN IP address of the Cosy+.

Another way to access the web panel of the Cosy+ is by using eBuddy. To get started with eBuddy and access the Cosy+, refer to the eBuddy of the [Related Documents, p. 3](#).

At the very first boot of the Cosy+ or after a level 2 reset, an interface language selection will be proposed.

Before beginning the configuration of the Cosy+, an authentication is required.



Default login & password are both *adm*. For security reasons, the Ewon Cosy+ will ask you to change the *adm* password.

You can perform the configuration of your Ewon Cosy+ through different methods:

- The eCatcher Easy Setup

This method benefits from the use of a USB stick or SD card that holds a configuration file created inside eCatcher. More info in [Connect an Ewon device to Talk2M from *Related Documents, p. 3*](#)

- The Embedded Wizard Setup

If your Ewon Cosy+ hasn't been configured yet, a configuration wizard will be proposed which sets the basics settings of the Ewon Cosy+ but also the connection to the Talk2M environment.

On our website, a [Quick Start Guide](#) can be found which helps in the configuration of the Ewon Cosy+

6 Troubleshooting

6.1 Normal Boot Process

The normal boot process of the Ewon Cosy+ takes approximately 1m30 to 2 minutes to complete. During this process, all LEDs are first shortly on (except **BI1**) then only the **PWR** LED stays steady green.

As soon as the boot process is completed and the unit is ready to be used, the **USR** LED blinks green slowly whereas others might be steady green (if the device is connected to Internet, Talk2M...).

6.2 Resetting the Ewon Cosy+

The reset button **BI1** is located on the front of the Cosy+ (see [Front, p. 12](#)). The reset function of this button is active only if pressed while powering on.

The Ewon Cosy+ features two levels of reset:

6.2.1 First Reset Level: User Reset

The first reset level is a selective reset that erases the user files part and the system settings. This type of reset does not alter the communication parameters of the Ewon Cosy+.

Hereunder is the process to perform a first reset level:

- Power off the unit.
- While powering it on, press & maintain the reset button. The LED labeled **BI1** turns green.
- Keep the reset button pressed for approximately 30 seconds until the **USR** LED blinks red 1x per second. If it isn't released at that specific moment, a second level reset phase is initiated. The LED labeled **BI1** turns off.
- Wait approximately 30 seconds until the reset process is completed.
- The Cosy+ automatically restarts and the unit is ready to be used, the **USR** LED blinks green slowly (this entire step takes approximately 2 minutes).

6.2.2 Second Reset Level: Factory Reset

The second level reset restores the Cosy+ to its factory settings. This operation consists in 3 steps:

- Format the entire non volatile memory, including all COM parameters and IP addresses
- Full hardware auto-test with result shown by the **USR** LED
- Return to ex-factory configuration (default configuration)

Hereunder is the process to perform a second reset level:

- Power off the unit.
- While powering it on, press & maintain the reset button. The LED labeled **BI1** turns green.
- Keep the reset button pressed for approximately 35 seconds until the **USR** LED remains red steady.
- When this state is reached, release the button. The LED labeled **BI1** turns off.
- Check if the auto test is successful, the **USR** LED blinks red with a pattern of 200ms on and 800ms off. The Cosy+ does NOT restart by itself in normal mode and remains running in this diagnostic mode.

- Power off the Ewon Cosy+ and power it on again to reboot the unit in a normal mode. As described before, the Cosy+ returns to its default COM parameters and factory IP addresses (such as LAN 10.0.0.53) after this level 2 reset is performed.

Any other LED pattern reflects a problem. The pattern will start with 200ms on (start of the pattern) followed by off and a certain number of times of a 1 second on allowing to identify the nature of the detected problem. If an error pattern occurs on the **USR** LED, please check out the troubleshooting page: www.ewon.biz/support

6.3 Impact Matrix of a Reset

Reset level	Erased or Reset	Preserved
Impact of a reset level 1 User reset	adm password	LAN IP address + mask
	Cosy+ identification	Internet access
	User web site	Language settings
		Modem / Wi-Fi settings
		Talk2M configuration
		Proxy configuration
		LAN switch configuration
	Gateway (USB, NAT 1:1) ¹	
Impact of a reset level 2 Factory reset	The Ewon Cosy+ will be reset to a factory settings configuration. All parameters will be lost	

1. Configuration remains even if the Wizards on Ewon web interface indicates otherwise

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A Connector Pinout & Related Specifications

A.1 Main Connector

As shown in the below picture, the female mating connector is labeled with the appropriate symbols.

Characteristic	Value
Connector type	MINICONNEC MC model Type MC 1.5 / 9-ST-3.5 Pitch = 3.50mm 9-pin female
Maximal tightening torque	0.25Nm <i>In the absence of a torque wrench, a soft manual tightening is sufficient</i>


PIN	ICON	ID	Description
1	O.	DO_COM	Output signal (0V ground) connected to the emitter of the MOSFET transistor
2	O	DO	Output signal connected to the drain of the MOSFET transistor
3	O ₊	DO_VDC	Common of the external predrive power supply (between +12 et +24 VDC)
4	I.	DI_COM	Ground of the input (isolated)
5	I ₁	DI1	Input signal 1
6	I ₂	DI2	Input signal 2
7	+	Power in VDD +	Between +12 and +24 VDC
8	-	Power in GND —	0V
9		Functional earth	



Fig. 9 Connector pinout

B Specification of the External Power Supply

The Ewon Cosy+ should be supplied from external, separately provided power supply 12-24Vdc, 30W min. certified for 60°C and for altitudes up to 2000m.

Power supply should be separately certified according to UL/IEC 62368-1 with ES1, PS2 output or separately certified to IEC/UL60950–1 with LPS output or Class2 per NEC..

Characteristics of the power supply can be found hereunder:

Characteristic	Value
Power supply voltage	External 12-24 VDC +/- 19%
Maximum Ewon Cosy+ input power	30W maximum
Internal voltage protection	30V maximum
Input protection	Protected against polarity inversion

C Digital Output & Digital Inputs

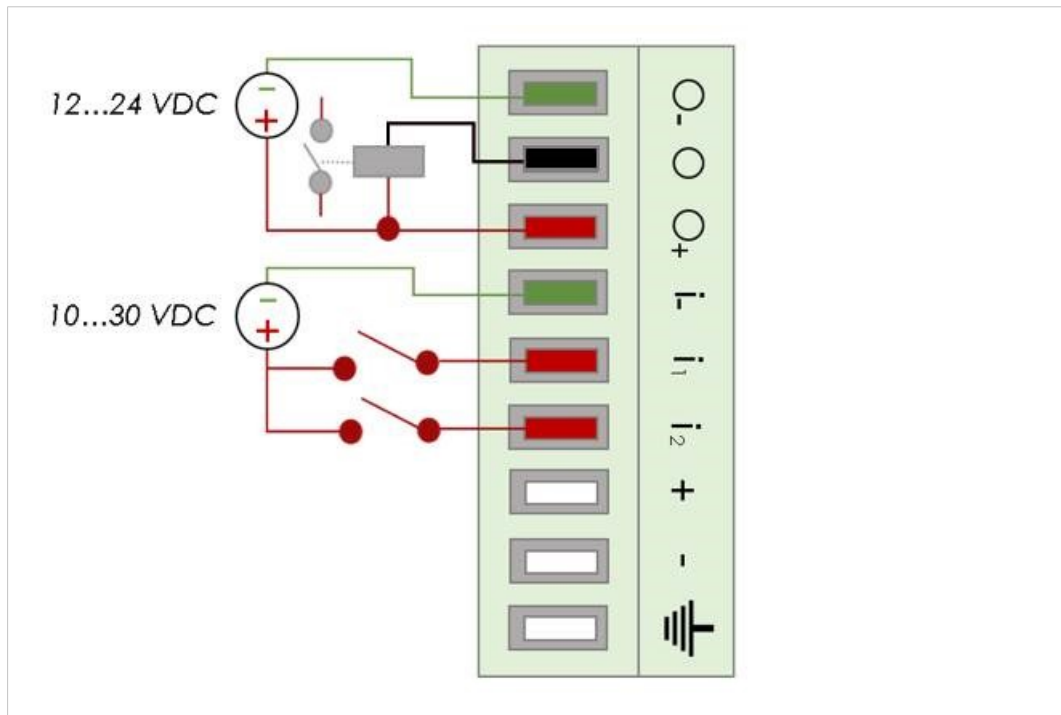


Fig. 10 Current scheme of the main connector

Characteristic	Value
Type of digital output ²	Open drain MOSFET
Maximum current (ext,source)	200 mA
Isolation (both DI & DO)	1.5 kV
DI voltage range	0 to 24 VDC
DI protection	33 VDC Max
DI OFF state — input voltage range	0 to 5 VDC
DI ON state — input voltage range	10 to 30 VDC
DI ON state — current range	From 3,8 mA @ 12 VDC to 8,2 mA @ 24 VDC

The Digital Output is activated by an open drain MOSFET transistor driven by an optocoupler. The maximum current flow inside this transistor has a value above the one specified in the Cosy+, in order to cope with the switching power losses.

The transistor used is in an open drain type with predrive. This means the relay power supply has to be supplied from an external source to the predrive electronics.

The diagram below shows the external wiring needed for proper operation of the digital output. A relay has been chosen for this sample application but any load within the specifications can be used instead.



This is a sink only output to ground (the transistor acts as a switch ground).

2. During the starting boot process, the DO will be switched ON for a short time (2 seconds)

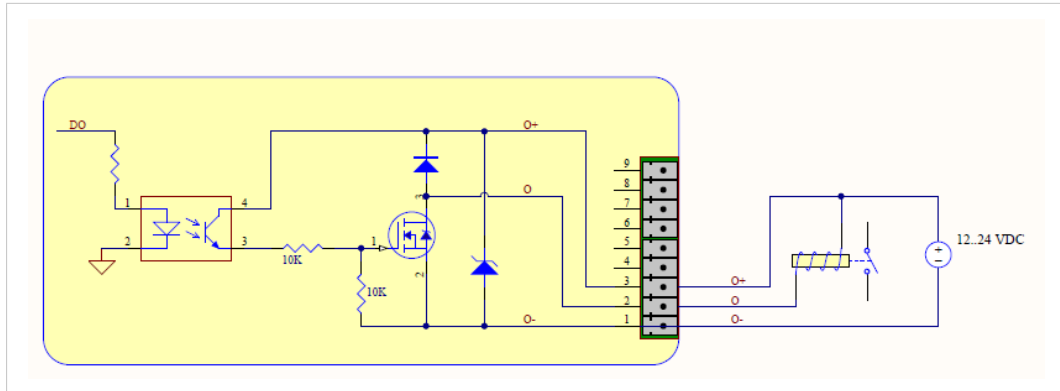


Fig. 11 External wiring for the Digital Output

C.1 Possible Features

Wiring the Digital Output & Inputs can be used to externalize some features (as connectivity condition) as described below:

LED	Connector	Description
KEY	DI1	Authorize or prevent the Internet connection.
		Authorize or prevent the VPN connection.
		Trigger an SMS or email notification.
DI2	DI2	Trigger an SMS or email notification.
T2M	DO ³	<p>Can be wired to an external device to propagate the Talk2M status. The DO is set to 1 when there is an active remote connection (= remote user connected). Here is a summary of the DO status based on Talk2M connectivity:</p> <ul style="list-style-type: none"> T2M LED off ► DO off There is no VPN tunnel established T2M LED steady ► DO off The VPN tunnel is established but there is no active remote connection (no remote user connected through Talk2M) T2M LED blinking ► DO on The VPN tunnel is established and there is an active remote connection (a remote user connected through Talk2M)

The configuration of these conditions has to be done during the “DI Config” wizard which offers the opportunity whether the **Digital Input** should be used or not and for which purpose.

3. During the starting boot process, the DO will be switched ON for a short time (2 seconds)

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