

# WAGO Industrial Switches

Industrial Eco Switch, 8 Ports 100BASE-TX

852-112/000-001



© 2021 WAGO Kontakttechnik GmbH & Co. KG  
All rights reserved.

**WAGO Kontakttechnik GmbH & Co. KG**

Hansastraße 27  
D - 32423 Minden

Phone: +49 571/887 – 0  
Fax: +49 571/887 – 844169  
E-Mail: ✉ [info@wago.com](mailto:info@wago.com)  
Internet: 🌐 [www.wago.com](http://www.wago.com)

**Technical Support**

Phone: +49 571/887 – 44555  
Fax: +49 571/887 – 844555  
E-Mail: ✉ [support@wago.com](mailto:support@wago.com)

Every conceivable measure has been taken to ensure the accuracy and completeness of this documentation. However, as errors can never be fully excluded, we always appreciate any information or suggestions for improving the documentation.

E-Mail: ✉ [documentation@wago.com](mailto:documentation@wago.com)

We wish to point out that the software and hardware terms as well as the trademarks of companies used and/or mentioned in the present manual are generally protected by trademark or patent.

**WAGO is a registered trademark of WAGO Verwaltungsgesellschaft mbH.**

# Table of Contents

<b>Provisions</b> .....	<b>5</b>
1.1 Intended Use.....	5
1.2 Typographical Conventions.....	6
1.3 Legal Information .....	7
<b>Safety</b> .....	<b>9</b>
2.1 General Safety Regulations .....	9
2.2 Electrical Safety.....	9
2.3 Thermal Safety.....	10
2.4 Mechanical Safety.....	10
2.5 Indirect Safety .....	11
<b>Overview</b> .....	<b>12</b>
3.1 Industrial ETHERNET Technology.....	12
3.2 Switching Technology .....	12
3.3 Autonegotiation .....	12
3.4 Autocrossing.....	12
3.5 Functioning of Switches .....	13
3.6 Store-and-forward switching mode .....	13
3.7 Line Depth in PROFINET.....	13
3.8 Port Speed & Duplex Mode.....	13
<b>Properties</b> .....	<b>14</b>
4.1 Views.....	14
4.1.1 Front View .....	14
4.1.2 Top View .....	15
4.2 Label.....	15
4.3 Connections .....	16
4.3.1 Grounding screw .....	16
4.3.2 Power Supply .....	16
4.3.3 Network Connections .....	17
4.3.3.1 10/100BASE-TX ports .....	17
4.4 Display Elements.....	18
4.4.1 Unit LEDs .....	18
4.4.2 Port LEDs .....	18
4.5 Technical data.....	19
4.5.1 Product.....	19
4.5.2 Power Supply .....	19
4.5.3 Communication .....	19
4.5.4 Environment requirements .....	19
4.6 Guidelines, approvals and standards.....	19
4.6.1 Approvals .....	19

---

4.6.2	Regulations and Standards .....	20
	<b>Planning.....</b>	<b>21</b>
5.1	Structure Guidelines.....	21
5.1.1	Installation Site .....	21
	<b>Transport and Storage.....</b>	<b>22</b>
	<b>Installation and Removal.....</b>	<b>23</b>
7.1	Installation .....	23
7.1.1	Installation on a Carrier Rail .....	23
7.2	Removal .....	23
7.2.1	Removal from Carrier Rail .....	23
	<b>Connection .....</b>	<b>24</b>
8.1	Grounding.....	24
8.2	Connecting the Supply Voltage .....	24
8.3	Connect 10/100BASE-TX ports .....	24
	<b>Diagnostics.....</b>	<b>25</b>
	<b>Decommissioning .....</b>	<b>26</b>
10.1	Disposal and Recycling .....	26
	<b>Appendix.....</b>	<b>27</b>
11.1	RJ-45 Cable .....	27

# Provisions

This documentation applies to the following product:

852-112/000-001

## 1.1 Intended Use

The device is designed for the IP30 protection class. It is protected against the insertion of solid items and solid impurities up to 2.5 mm in diameter, but not against water penetration. Unless otherwise specified, the device must not be operated in wet and dusty environments.

### Warranty and Liability

The terms set forth in the General Business & Contract Conditions for Delivery and Service of WAGO Kontakttechnik GmbH & Co. KG and the terms for software products and products with integrated software stated in the WAGO Software License Contract – both available at [www.wago.com](https://www.wago.com) – shall apply. In particular, the warranty is void if:

- The product is improperly used.
- The deficiency (hardware and software configurations) is due to special instructions.
- Modifications to the hardware or software have been made by the user or third parties that are not described in this documentation and that has contributed to the fault.

Individual agreements always have priority.

### Obligations of Installers/Operators

The installers and operators bear responsibility for the safety of an installation or a system assembled with the products. The installer/operator is responsible for proper installation and safety of the system. All laws, standards, guidelines, local regulations and accepted technology standards and practices applicable at the time of installation, and the instructions in the the products' Instructions for Use, must be complied with. In addition, the Installation regulations specified by Approvals must be observed. In the event of non-compliance, the products may not be operated within the scope of the approval.

### Improper Use

Improper use of the product is not permitted. Improper use occurs especially in the following cases:

- Non-observance of the intended use.
- Use without protective measures in an environment in which moisture, salt water, salt spray mist, dust, corrosive fumes, gases, direct sunlight or ionizing radiation can occur.
- Use of the product in areas with special risk that require continuous fault-free operation and in which failure of or operation of the product can result in an imminent risk to life, limb or health or cause serious damage to property or the environment (such as the operation of nuclear power plants, weapons systems, aircraft and motor vehicles).

## 1.2 Typographical Conventions





### Number Notation

100	Decimals: Normal notation
0x64	Hexadecimals: C-notation
'100'	Binary: In single quotation marks
'0110.0100'	Nibbles separated by a period

### Text Formatting

<i>italic</i>	Names of paths or files
<b>bold</b>	Menu items, entry or selection fields, emphasis
Code	Sections of program code
>	Selection of a menu point from a menu
"Value"	Value entries
[F5]	Identification of buttons or keys

### Cross References / Links

	Cross references/links to a topic in a document
	Cross references / links to a separate document
	Cross references / links to a website
	Cross references / links to an email address

### Action Instructions

- ✓ This symbol identifies a precondition.
- 1. Action step
- 2. Action step
  - ⇒ This symbol identifies an intermediate result.
- ⇒ This symbol identifies the result of an action.

### Lists

- Lists, first level
  - Lists, second level

### Figures

Figures in this documentation are for better understanding and may differ from the actual product design.

### Notes

#### **DANGER**

#### Type and source of hazard

Possible consequences of hazard that also include death or irreversible injury

- Action step to reduce risk

**⚠ WARNING****Type and source of hazard**

Possible consequences of hazard that also include severe injury

- Action step to reduce risk

**⚠ CAUTION****Type and source of hazard**

Possible consequences of hazard that include at least slight injury

- Action step to reduce risk

**ⓘ NOTICE****Type and source of malfunction (property damage only)**

Possible malfunctions that may restrict the product's scope of functions or ergonomics, but do not lead to foreseeable risks to persons

- Action step to reduce risk

**ⓘ Note****Notes and information**

Indicates information, clarifications, recommendations, referrals, etc.

## 1.3 Legal Information

### Intellectual Property

Unless barred by applicable legal provisions, unauthorized copying and distribution of this document, as well as the use and communication of its content are strictly prohibited unless expressly authorized by prior agreement. Third-party products are always mentioned without any reference to patent rights. WAGO Kontakttechnik GmbH & Co. KG, or for third-party products, their manufacturer, retain all rights regarding patent, utility model or design registration.

Third-party trademarks are referred to in the product documentation. The “®” and “™” symbols are omitted hereinafter. The trademarks are listed in the Appendix (Protected Rights).

### Subject to Change

The instructions, guidelines, standards, etc., in this manual correspond to state of the art at the time the documentation was created and are not subject to updating service. The installer and operator bear sole responsibility to ensure they are complied with in their currently applicable form. WAGO Kontakttechnik GmbH & Co. KG retains the right to carry out technical changes and improvements of the products and the data, specifica-

tions and illustrations of this manual. All claims for change or improvement of products that have already been delivered – excepting change or improvement performed under guarantee agreement – are excluded.

### **Licenses**

The products may contain open-source software. The requisite license information is saved in the products. This information is also available under [🌐 www.wago.com](https://www.wago.com).



# Safety

This section contains safety rules that must be followed for hazard-free use of the product.

This section is aimed at the following target groups:

- Planners and installers
- Operators
- Qualified assembly personnel
- Qualified installation personnel (electrical installation, technician network installation etc.)
- Qualified operating personnel
- Qualified service and maintenance personnel

Obey the following safety rules:

## 2.1 General Safety Regulations

- This documentation is part of the product. Therefore, retain the documentation during the entire service life of the product. Pass on the documentation to any subsequent user of the product. In addition, ensure that any supplement to this documentation is included, if necessary.
- Any actions related to the use of WAGO software may only be performed by qualified staff with sufficient knowledge to use the respective PC system.  
Steps in which files are created or changed on a PC system may only be performed by qualified employees with sufficient knowledge in the administration of the PC system used in addition to file creation or modification.  
Steps that change the PC system's behavior within a network may only be performed by qualified employees with sufficient knowledge of administration of the responsible network.
- Changes to switch configurations in the network must always be performed by qualified personnel with sufficient skills.
- Comply with the laws, standards, guidelines, local regulations and accepted technology standards and practices applicable at the time of installation.
- If remote access to control components and control networks is required, use a Virtual Private Network (VPN).

## 2.2 Electrical Safety

- High voltage can cause electric shock or burns! Disconnect all power sources from the product before performing any installation, repair or maintenance.

### Power Supply

- Connecting impermissible current or frequency values may destroy the product.
- Switch off power supply to the device immediately if the product malfunctions or is damaged.

### Ground/Protection/Fuses

- Protect the product with an appropriate overcurrent protection device.
- Using the overvoltage and lightning protection designs intended for the building.

- When handling the product, please ensure that environmental factors (personnel, work space and packaging) are properly equalized. Do not touch any conducting parts.

#### **Lines**

- Maintain spacing between control, signal and data lines and the power supply lines.
- Observe permissible temperature range of connecting cables.
- Use appropriate strain relief.
- Make sure the pin assignment is correct.
- Avoid reverse polarity of data and power supply lines, as this may damage the devices involved.

#### **Protect**

- Observe the applicable standards for EMC-compatible installations.

#### **Radio, etc.**

- This is a Class A product. The product can cause radio interference in residential areas; in this case, the operator can be required to take appropriate measures to prevent such interference.
- For industrial use: WAGO's 852 Series ETHERNET Switches are certified to be used in residential and in industrial environments. If the latter, they should be considered as exposed operating components. Therefore, in industrial applications, only install these switches in lockable housings, cabinets or electrical operation rooms. Access must be limited to authorized, qualified staff having the appropriate key or tool.
- Only use devices equipped with ETHERNET or RJ-45 connectors in LANs. Never connect these devices with telecommunication networks.

#### **Components**

- Replace defective or damaged device/module (e.g., in the event of deformed contacts).

## **2.3 Thermal Safety**

- The surface of the housing heats up during operation. Under special conditions (e.g., in the event of a fault or increased surrounding air temperature), touching the product may cause burns. Allow the product to cool down before touching it.
- If the surface temperature of the product can exceed 40 °C, wear protective gloves and attach protective covers and/or touch-proof protection.
- The temperature inside the additional enclosure must not exceed the surrounding air temperature permitted for the mounted product.

## **2.4 Mechanical Safety**

- As the installer of the system, you are responsible for ensuring the necessary touch-proof protection. Follow the installation guidelines for the specific application.
- The surrounding air temperature for operation indicated in the technical data applies to the nominal mounting position. Different mounting positions may affect the permissible surrounding air temperature for operation.
- Cooling of the product must not be impaired. Ensure air can flow freely and that the minimum clearances from adjacent products/areas are maintained.
- Do not install the product on or in the vicinity of easily flammable materials.

- When selecting the location for installation, note that the control cabinet must remain accessible for maintenance purposes.
- Before startup, please check the product for any damage that may have occurred during shipping. Do not put the product into operation in the event of mechanical damage.
- Only use this product in a controlled environment.
- Do not open the product housing.
- Avoid conductive contamination.

## 2.5 Indirect Safety

- Do not use hard objects that could cause scratches for cleaning.
- Do not use any contact spray for cleaning.
- Clean tools and materials are imperative for handling the product.
- The products are not resistant to materials having seeping and insulating properties such as aerosols, silicones and triglycerides (found in some hand creams). If these substances occur in the environment of the products, install the products in an additional housing that is also resistant to these substances.
- Before installation and operation, please read the product documentation thoroughly and carefully. In addition, note the information on the product housing and further information, e.g. at [www.wago.com](http://www.wago.com)/- Change the password. The factory default setting is widely known and does not provide adequate protection.
- Give all products in a network different IP addresses.
- Use only the current firmware.
- Regularly perform threat analyses. You can check whether the measures taken meet your security requirements.
- Use “defense-in-depth” mechanisms in your system's security configuration to restrict the access to and control of individual products and networks.

# Overview

The 852-112/000-001 switch is an industrial unmanaged ETHERNET switch with 8 10/1000Base-TX ports. The ports of the industrial switch allow multiple segments to be formed to reduce network congestion, and each user node can be assigned its own bandwidth. The slim design with DIN rail adapter allows easy installation in the control cabinet with high vibration and shock resistance. The automatic recognition of the transmission rate (autonegotiation) as well as the automatic determination of the transmit and receive lines (Auto MDI-X) enable simple plug & play operation and thus help to save costs and time during commissioning.

## 3.1 Industrial ETHERNET Technology

The range of WAGO Switches ensures scalability of your network infrastructure with outstanding electrical and mechanical characteristics. These rugged devices are designed for industrial use and are fully compliant with the IEEE 802.3, 802.3u and 802.3x standards. They have power supply with a supply voltage range of 12 ... 48 VDC. Characteristics such as auto-negotiation and auto MDI/MDIX (crossover) on all 10/100BASE-TX ports are also realized.

## 3.2 Switching Technology

Industrial ETHERNET primarily uses switching technology. This technology allows any network subscriber to send at any time because the subscriber always has an open peer-to-peer connection to the next switch. The connection is bidirectional, i.e., the subscriber can send and receive at the same time (full duplex). The targeted use of switching technology can increase real-time capability because the peer-to-peer connection prevents collisions in network communication.

## 3.3 Autonegotiation

Autonegotiation allows the switch to detect the transmission rate and operating mode for each port and the connected subscriber or subscribers, and to set them automatically. The highest possible mode (transmission speed and operating mode) is set. Autonegotiation is available to ETHERNET subscribers connected to the switch via copper cable. This makes the switch a plug-and-play device.

## 3.4 Autocrossing

Autocrossing (MDI/MDI-X, "Medium Dependent Interface") automatically reconfigures the receive and transmit signals for twisted-pair interfaces as needed. This allows users to use wired and crossover cables in the same manner 1:1.

### 3.5 Functioning of Switches

Switches analyze all incoming data packages and forward them to the port where the corresponding destination address is located. Exceptions are the multicast and broadcast telegrams, which are forwarded to all active ports of the switch.

For selective forwarding of the telegrams, each switch contains of an address / port assignment table in which the assignments of the destination addresses to a specific port of the switch are stored. The address / port mapping table is typically generated and maintained automatically by the switch through a self-learning process. Incoming data packages are analyzed, filtered and forwarded directly to the appropriate port by using this assignment table based on their destination address. The incoming data package is sent to all ports, if there is no corresponding entry in the assignment table for a destination address. If a destination address answers, the assignment table is complemented with this destination address as well as the associated port.

### 3.6 Store-and-forward switching mode

In “Store and Forward” mode, the ETHERNET switch caches the entire data telegram, checks it for errors (CRC checksum) and if there are no errors, puts it in a queue. Subsequently, the data telegram (MAC table) is selectively forwarded to the port that has access to the addressed node.

The time delay required by the data telegram to pass the store-and-forward switch depends on the telegram length.

Advantage of “Store and Forward”: The data telegrams are checked for correctness and validity. This prevents faulty or damaged data telegrams from being distributed via the network.

### 3.7 Line Depth in PROFINET

Line depth (cascading) is the number of all switches in a communication path.

The maximum line depth depends on the send cycle.

#### Note

##### **Observe line depth!**

Observe the maximum line depth for switches in Store-and-Forward mode according to the “Topology Check” section of PI-PROFINET Commissioning Guideline (PROFINET\_Commissioning\_8081)( [www.profibus.com](http://www.profibus.com)).

### 3.8 Port Speed & Duplex Mode

After a cable is plugged into a specific port, the system uses auto negotiation to determine the transmission mode for the new twisted pair connection:

If the connected device does not support auto negotiation or has auto negotiation disabled, an auto sensing process is initiated to select the speed and set the duplex mode to half duplex.

# Properties

## 4.1 Views

### 4.1.1 Front View

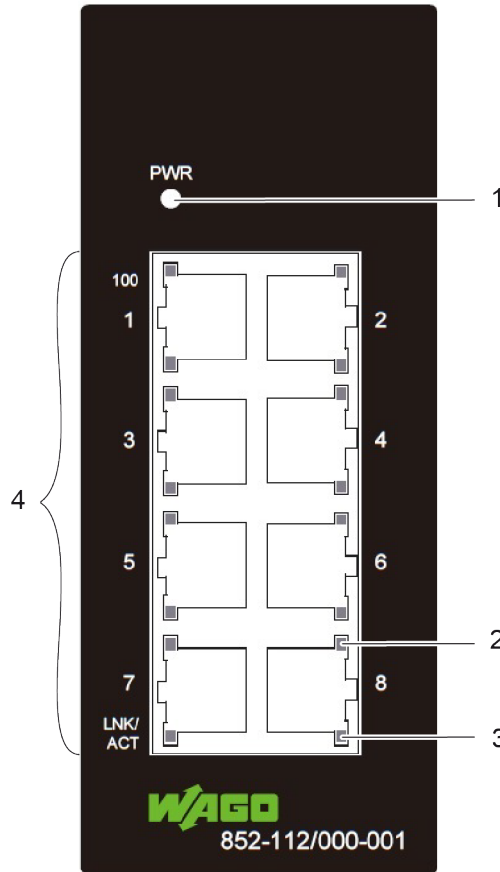


Figure 1: Front View of the Industrial Eco Switch

Table 1: Legend for Figure "Front View of the Industrial Eco Switch"

	Custom Name	Explanation	For details, see Section
1	PWR	Status LED Power Supply	<a href="#">Display Elements [ 18]</a>
2	-	Status LED TX-Port-100-Mbit/s (1 LED for each port)	<a href="#">Port LEDs [ 18]</a>
3	-	Status LED TX-Port LNK/ACT (1 LED for each port)	<a href="#">Port LEDs [ 18]</a>
4	-	RJ-45 port (10/100BASE-TX-Ports) (8)	<a href="#">Connections [ 16]</a>

### 4.1.2 Top View

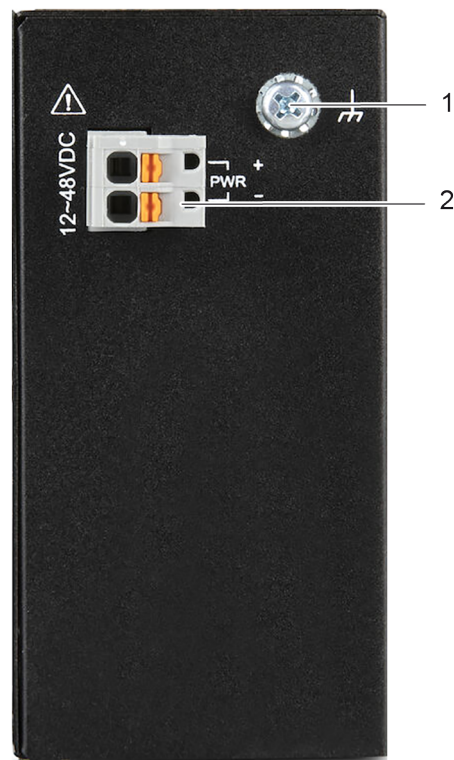


Figure 2: Top View of the Industrial Eco Switch

Table 2: Legend for Figure "Top View of the Industrial Eco Switch"

	Custom Name	Explanation	For details, see Section
1	-	Grounding screw	<a href="#">Grounding screw [▶ 16]</a>
2	-	Terminal block (male connector) for power supply PWR	<a href="#">Power Supply [▶ 16]</a>

## 4.2 Label

On the side of the industrial switch, there is a label with the serial number "Serial No." and the hardware and software version.

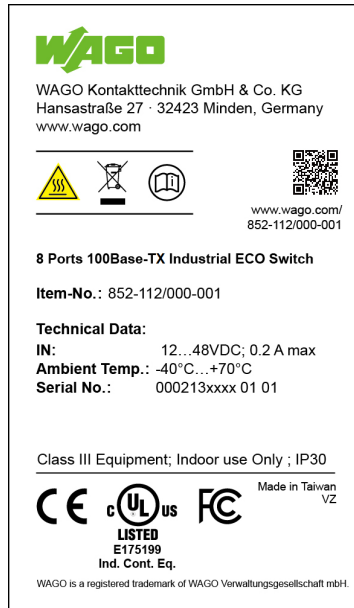


Figure 3: Label

Table 3: Legend for Figure "Label"

Custom Name	Description
Item-No.	Item number
Serial No.	Device serial number
	Firmware version (left number sequence) (01)
	Hardware version (right number sequence) (01)

### 4.3 Connections

#### 4.3.1 Grounding screw

The switch must be grounded. Connect the grounding screw to the ground potential. Do not operate the switch without an appropriately installed protective earth conductor.



Figure 4: Grounding screw

#### 4.3.2 Power Supply

The female connector (Order No. 2231-102/026-000) can easily be connected to the 2-pole male connector located on the top of the industrial ECO switch.

The male connector shows the following pin assignment:

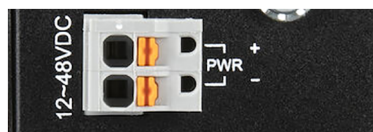


Figure 5: Power Supply (PWR) Port



Table 4: Legend for Figure "Power Supply (PWR) Port"

Connection	Custom Name	Description
+	PWR	Primary DC input
-	PWR	Primary DC input

### ! NOTICE

#### Damage to Property Caused by Electrostatic Discharge (ESD)!

DC Powered Switch: Power is supplied through an external DC power source. Since the switch does not include a power switch, plugging its power adapter into a power outlet will immediately power it on.

### 4.3.3 Network Connections

The industrial switch uses ports with copper connectors that can be used with ETHERNET and/or Fast ETHERNET protocols.

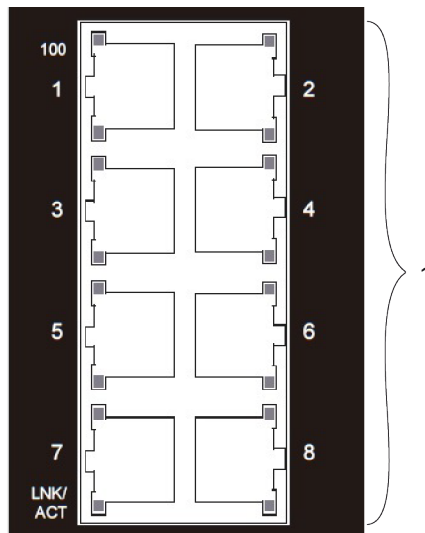


Figure 6: Network Connections

Table 5: Legend for Figure "Network Connections"

No.	Description	Details see Section:
1	Connection 8 x RJ-45 (10/100BASE-TX-Ports)	<a href="#">10/100BASE-TX ports [ 17 ]</a>

#### 4.3.3.1 10/100BASE-TX ports

The 10/100BASE-TX ports support network speeds of 10 Mbit/s and 100 Mbit/s and can be operated in half and full-duplex transmission modes. These ports also provide automatic crossover detection (Auto-MDI/MDI-X), with plug&play capabilities. Simply plug the network cables into the ports; they then adapt to the end node devices.

We recommend the following cable for the RJ-45 ports:

- Cat 5e or better with a max. cable length 100 m.

### 4.4 Display Elements

The industrial switch is equipped device LEDs and port LEDs. You can see the status of the industrial switch at a quick glance of the device LEDs, while the port LEDs provide information about connection actions.

#### 4.4.1 Unit LEDs



Figure 7: Unit LEDs

Table 6: Legend for Figure „Unit LEDs“

LED	Name	Status	Description
PWR	Primary Power LED	Green	Using the primary power supply.
		Off	The primary power supply is off or has an error

#### 4.4.2 Port LEDs

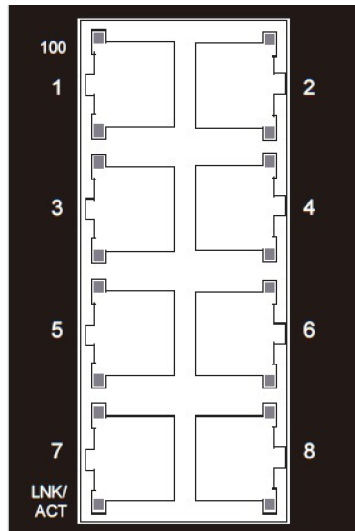


Figure 8: Port LEDs

Table 7: Legend for Figure „Port LEDs“

LED	Connection	Status	Description
100	10/100BASE TX ports LED (1 LED for each port)	Green	Port in operation at 100 Mbit/s.
		Off	No connection or connection with 10 Mbit/s in operation.
LNK/ACT	10/100BASE TX ports LED (1 LED for each port)	Green	Port in operation at 10/100 Mbit/s.
		Flashing	Data traffic being routed over the port.
		Off	No proper link established at the port.

## 4.5 Technical data

### 4.5.1 Product

Table 8: Technical Data – Device Data

Property	Value
Width	50 mm
Height	116 mm
Depth	100 mm (from the top edge of the carrier rail)
Weight	472 g
Degree of protection	IP30

### 4.5.2 Power Supply

Table 9: Technical Data – Power Supply

Property	Value
Supply voltage	12 ... 48 VDC
Power consumption, max.	2 W

### 4.5.3 Communication

Table 10: Technical Data – Communication

Property	Value
Ports (Copper, RJ-45)	8 x 10/100BASE-TX
Standards	IEEE 802.3 10BASE-T IEEE 802.3u 100BASE-TX IEEE 802.3x Flow Control
PROFINET	Conformance Class A (CC-A)
Topology	Star, Tree, Line

### 4.5.4 Environment requirements



Table 11: Technical Data – Environmental Conditions

Property	Value	
Surrounding air temperature (operation)	-40 ... +70 °C	
Surrounding air temperature (storage)	-40 ... +85 °C	
UL 61010-2	Use	Indoor
	Pollution degree	PD 2
Relative humidity	5 ... 95 % (without condensation)	
Vibration resistance	IEC 60068-2-6	
Shock resistance	IEC 60068-2-27	
EMC immunity to interference	EN 61000-6-2	
EMC Emission of interference	EN 61000-6-4	

## 4.6 Guidelines, approvals and standards

### 4.6.1 Approvals

The following approvals have been granted for the product:

	Conformity Marking	
	Ordinary Locations	UL61010-2-201 (E175199)

### Note

#### More information on approvals

You can find detailed information on the approvals online at:

 [www.wago.com/<item number>](http://www.wago.com/<item number>)

#### 4.6.2 Regulations and Standards

Please observe the standards and regulations that are relevant to installation:

- The data and power lines must be connected and installed in compliance with the standards to avoid failures on your installation and eliminate any danger to personnel.
- For installation, startup, maintenance and repair, please observe the accident prevention regulations of your machine (e.g., DGUV Regulation "Electrical Installations and Equipment").
- Emergency stop functions and equipment must not be deactivated or otherwise made ineffective. See relevant standards (e.g., EN 418).
- Your installation must be equipped in accordance to the EMC guidelines so electromagnetic interferences can be eliminated.
- Please observe the safety measures against electrostatic discharge according to EN 61340-5-1/-3. When handling the modules, ensure that environmental factors (persons, workplace and packing) are well grounded.
- The relevant valid and applicable standards and guidelines regarding the installation of switch cabinets must be observed.

# Planning

## 5.1 Structure Guidelines

### 5.1.1 Installation Site

The location selected to install the may greatly affect its performance. When selecting a site, we recommend considering the following rules:

- Install the at an appropriate place. See Section Environment requirements , for the acceptable temperature and humidity operating ranges.
- Make sure that the heat output from the and ventilation around it is adequate.
- Do not place any heavy objects on the .

# Transport and Storage

The original packaging offers optimal protection during transport and storage.

- Store the product in suitable packaging, preferably the original packaging.
- Only transport the product in suitable containers/packaging.
- Make sure the product contacts are not contaminated or damaged during packing or unpacking.
- Observe the specified ambient climatic conditions for transport and storage ([🔗 Technical data \[▶ 19\]](#)).

# Installation and Removal

## 7.1 Installation

### CAUTION

#### Hot Surface!

The surface of the housing heats up during operation. Under special conditions (e.g., in the event of a fault or increased surrounding air temperature), touching the product may cause burns!

- Allow the product to cool down before touching it.

#### 7.1.1 Installation on a Carrier Rail

The carrier rail must optimally support the EMC measures integrated into the system and the shielding of the internal data bus connections.

Place the onto the DIN rail from the top and snap it into position.

## 7.2 Removal

#### 7.2.1 Removal from Carrier Rail

To remove the industrial managed switch from the carrier rail, insert a suitable tool into the metal tab under the switch and deflect the metal tab downward.

You can then release the switch down from the carrier rail and remove it upwards.

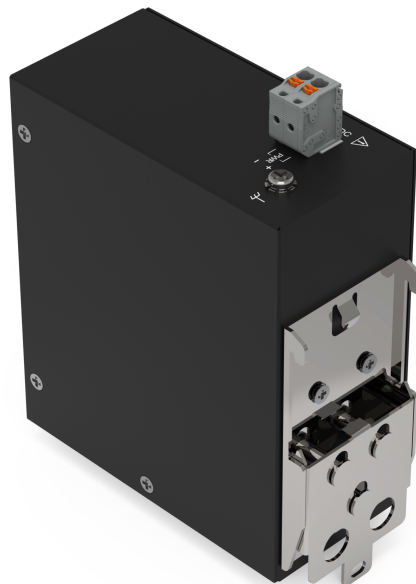


Figure 9: Industrial Eco Switch with DIN rail adapter

# Connection

## 8.1 Grounding

Grounding is through the grounding screw on the top of the product.

The switch must be grounded. Connect the grounding screw to the ground potential. Do not operate the switch without an appropriately installed protective earth conductor.

## 8.2 Connecting the Supply Voltage

The industrial eco switch uses direct current power supply for 12 ... 48 VDC .

The primary network link is established via a 2-pin plug-in connection located on the top of the switch.

The female connector (Item No. 2231-102/026-000) is composed of 2 connecting terminals and can be inserted and removed easily by hand to connect to the 2-pin plug connector located on the top of the switch.

1. Connect a suitable grounding conductor to the grounding lug on the top of the switch.

**Note** **Ground for the switch**

The ground for the switch prevents electromagnetic interference from electromagnetic radiation.

Observe the corresponding standards for EMC-compatible installations as well.

2. Plug the female connector into the male connector of the switch if it has not already been plugged in. Check the tight fit of the multipoint connector by gently shaking it.
3. PWR +/-:  
To connect or disconnect the conductors, actuate the spring directly in the female connector using a screwdriver or an operating tool and insert or remove the conductor.
4. Check whether the power LED "PWR" on the top of the device lights up when power is supplied to the device. If not, check to ensure that the power cable is plugged in correctly and fits securely.

## 8.3 Connect 10/100BASE-TX ports

The 10/100BASE-TX ports (RJ-45-ETHERNET ports) of the support both autosensing and auto-negotiation.

1. Connect one end of the twisted pair cable to an available RJ-45 port on the and the other end to the port of the selected network node.
2. Check the respective port LED on the Industrial Switch that the connection is established (see Section [Port LEDs \[▶ 18\]](#)).





# Diagnostics

## Note

For diagnostics and troubleshooting, see sections:

### **Diagnostics via LED Indicators:**


- Diagnostics using product LEDs:  [Unit LEDs \[▶ 18\]](#)
  - Diagnostics using connection LEDs:  [Port LEDs \[▶ 18\]](#)
-

# Decommissioning

## 10.1 Disposal and Recycling

- Observe national and local regulations for the disposal of batteries, packaging and electrical and electronic equipment.
- Clear any data stored on electrical and electronic equipment.
- Remove any batteries or memory cards installed in electrical and electronic equipment.
- Dispose of all types of packaging to ensure a high level of recovery, reuse and recycling.
- Have electrical and electronic equipment sent to a local collection point.
- The guidelines 2006/66/EG, PPWD 2018/852/EU and WEEE 2012/19/EU apply throughout Europe. National directives and laws may vary.

Table 12: WEEE Mark

Logo	Description
	Electrical and electronic equipment may not be disposed of with household waste. This also applies to products without this mark.

Electrical and electronic equipment contain materials and substances that can be harmful to the environment and health. Electrical and electronic equipment must be disposed of properly after use. Environmentally friendly disposal benefits health, protects the environment from harmful substances in electrical and electronic equipment and enables sustainable and efficient use of resources.

# Appendix

## 11.1 RJ-45 Cable

Always use category 5e cables to connect your network devices. The pin assignment is given below:

Table 13: RJ-45 Cable

Contact	Description		Pair	Color
	4-wire	8-wire		
1	TD	D1+	2	White/Orange
2	TD-	D1-	2	Orange
3	RX+	D2+	3	White/Green
4	Not assigned	D3+	1	Blue
5	Not assigned	D3-	1	White/Blue
6	RX-	D2-	3	Green
7	Not assigned	D4+	4	White/Brown
8	Not assigned	D4-	4	Brown

### Note

#### Functions on the RJ45 connector

The industrial switch offers the functions autocrossing und autonegotiation to the RJ-45 connection.

# List of Tables

Table 1	Legend for Figure "Front View of the Industrial Eco Switch" .....	14
Table 2	Legend for Figure "Top View of the Industrial Eco Switch" .....	15
Table 3	Legend for Figure "Label" .....	16
Table 4	Legend for Figure "Power Supply (PWR) Port" .....	17
Table 5	Legend for Figure "Network Connections" .....	17
Table 6	Legend for Figure „Unit LEDs“ .....	18
Table 7	Legend for Figure „Port LEDs“ .....	18
Table 8	Technical Data – Device Data .....	19
Table 9	Technical Data – Power Supply .....	19
Table 10	Technical Data –Communication .....	19
Table 11	Technical Data – Environmental Conditions .....	19
Table 12	WEEE Mark .....	26
Table 13	RJ-45 Cable .....	27

# List of Figures

Figure 1	Front View of the Industrial Eco Switch .....	14
Figure 2	Top View of the Industrial Eco Switch.....	15
Figure 3	Label .....	16
Figure 4	Grounding screw .....	16
Figure 5	Power Supply (PWR) Port.....	16
Figure 6	Network Connections .....	17
Figure 7	Unit LEDs .....	18
Figure 8	Port LEDs.....	18
Figure 9	Industrial Eco Switch with DIN rail adapter .....	23

**WAGO Kontakttechnik GmbH & Co. KG**

Postfach 2880 · D - 32385 Minden  
Hansastraße 27 · D - 32423 Minden

✉ [info@wago.com](mailto:info@wago.com)  
🌐 [www.wago.com](http://www.wago.com)

Headquarters	+49 571/887 – 0
Sales	+49 (0) 571/887 – 44 222
Order Service	+49 (0) 571/887 – 44 333
Fax	+49 571/887 – 844169

WAGO is a registered trademark of WAGO Verwaltungsgesellschaft mbH.

Copyright – WAGO Kontakttechnik GmbH & Co. KG – All rights reserved. The content and structure of the WAGO websites, catalogs, videos and other WAGO media are subject to copyright. Distribution or modification of the contents of these pages and videos is prohibited. Furthermore, the content may neither be copied nor made available to third parties for commercial purposes. Also subject to copyright are the images and videos that were made available to WAGO Kontakttechnik GmbH & Co. KG by third parties.