Anybus® Managed Industrial L3 Switch

Important User Information

Disclaimer

The information in this document is for informational purposes only. Please inform HMS Industrial Networks of any inaccuracies or omissions found in this document. HMS Industrial Networks disclaims any responsibility or liability for any errors that may appear in this document.

HMS Industrial Networks reserves the right to modify its products in line with its policy of continuous product development. The information in this document shall therefore not be construed as a commitment on the part of HMS Industrial Networks and is subject to change without notice. HMS Industrial Networks makes no commitment to update or keep current the information in this document.

The data, examples and illustrations found in this document are included for illustrative purposes and are only intended to help improve understanding of the functionality and handling of the product. In view of the wide range of possible applications of the product, and because of the many variables and requirements associated with any particular implementation, HMS Industrial Networks cannot assume responsibility or liability for actual use based on the data, examples or illustrations included in this document nor for any damages incurred during installation of the product. Those responsible for the use of the product must acquire sufficient knowledge in order to ensure that the product is used correctly in their specific application and that the application meets all performance and safety requirements including any applicable laws, regulations, codes and standards. Further, HMS Industrial Networks will under no circumstances assume liability or responsibility for any problems that may arise as a result from the use of undocumented features or functional side effects found outside the documented scope of the product. The effects caused by any direct or indirect use of such aspects of the product are undefined and may include e.g. compatibility issues and stability issues.

Table of Contents

1   Preface

1.1   About This Document

This manual describes how to install Anybus Managed Industrial L3 Switch and set up a basic configuration.

For additional documentation and software downloads, FAQs, troubleshooting guides and technical support, please visit www.anybus.com/support.

1.2   Document Conventions

The following conventions are used to indicate safety information and other important content in this document:

⚠️ **WARNING**
Instruction that must be followed to avoid a risk of death or serious injury.

⚠️ **Caution**
Instruction that must be followed to avoid a risk of personal injury.

❗ Instruction that must be followed to avoid a risk of reduced functionality and/or damage to the equipment, or to avoid a network security risk.

ⓘ *Additional information which may facilitate installation and/or operation.*

1.3   Trademarks

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

2   Safety

2.1   Intended Use

The intended use of this equipment is as a communication interface and gateway. The equipment receives and transmits data on various physical levels and connection types.

If this equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

2.2   General Safety

> ⚠ **Caution**
> Ensure that the power supply is turned off before connecting it to the equipment.

> ❗ Connecting power with reverse polarity or using the wrong type of power supply may damage the equipment. Make sure that the power supply is connected correctly and of the recommended type.

3 Preparation

3.1 Package Checklist

Item	Pieces
Product unit (without SFP transceiver)	1
8 pin terminal block	1
Startup Guide	1
Safety and Regulatory Compliance Sheet	1

3.2 Support and Resources

For additional documentation and software downloads, FAQs, troubleshooting guides and technical support, please visit www.anybus.com/support.

ⓘ *Have the product article number available, to search for the specific product page. You find the product article number on the product cover.*
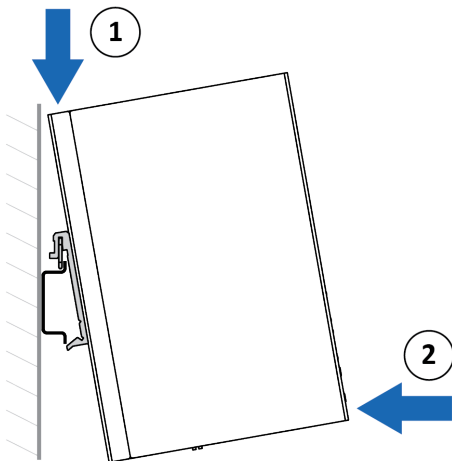
4   Installation

4.1   DIN Rail Mounting

> **!**   Mount the switch on a *DIN rail* in accordance with the EN 50022 standard.

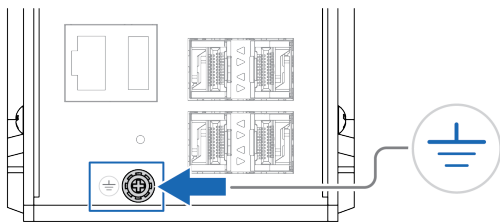**Procedure**

Mount the switch on a DIN rail:

1.   Insert the upper end of the *DIN rail clip* into the DIN rail.

2.   Push the bottom of the *DIN rail clip* into the DIN rail.
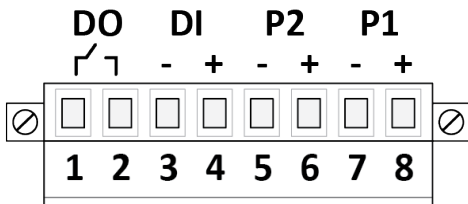
4.2   Connecting Ground Screw

> ❗   To avoid system damage, the equipment should be connected to ground.

Procedure

1.   Establish a direct connection between the ground screw and the grounding surface prior to connecting devices.
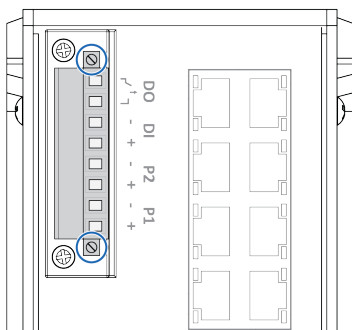
4.3   Terminal Block Connector

Contact Number	Description
1	DO, Digital Output
2	
3	DI, Digital Input −
4	DI, Digital Input +
5	P2, Power Input 2 −
6	P2, Power Input 2 +
7	P1, Power Input 1 −
8	P1, Power Input 1 +

4.4   Installing Terminal Block

Procedure

1. Attach the terminal block to the contact on the switch.
2. Fasten the terminal block with the 2 screws included.

4.5   Connecting Digital Output Wires
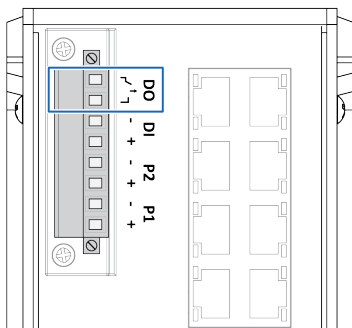
Before You Begin

The relay output is used to detect user-configured events.

When a user-configured event is triggered, the two wires attached to the *DO*, fault contacts, form a close circuit.

The fault circuit remains opened until a user-configured event occur.
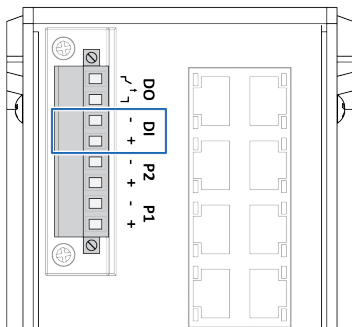
Procedure

Connect the Digital Output (DO):

1.   Insert the wires into the 2 pin *DO* contact on the *8 pin terminal block*.
2.   Tighten the *wire-clamp screws*.

4.6   Connecting Digital Input Wires

Procedure

Connect the Digital Input (DI):

1. Insert the wires into the 2 pin *DI -* and *DI +* contact on the *8 pin terminal block*.
2. Tighten the *wire-clamp screws*.

4.7   Connecting Power Wires

> ⚠️ **Caution**
> Ensure that the power supply is turned off before connecting it to the equipment.
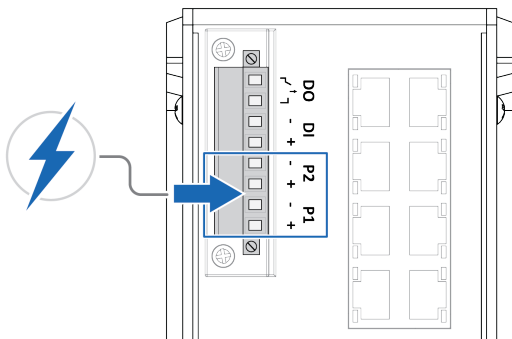
> ❗ Use a power supply of 24 VDC (10-60 VDC) to power the switch.
>
> Max power consumption: 16.08 W.

> ❗ The relay contact supports 0.5 A current, 24 VDC.

Procedure

1. **Connecting to main power supply P1:** Insert the positive and negative wires into the *P1+* and *P1-* contact on the *8 pin terminal block*.

2. **Connecting to redundant power supply P2:** Insert the positive and negative wires into the *P2+* and *P2-* contact on the *8 pin terminal block*.

3. Tighten the *wire-clamp screws*.

4. Connect the power wires to a *DC switching type power supply.*
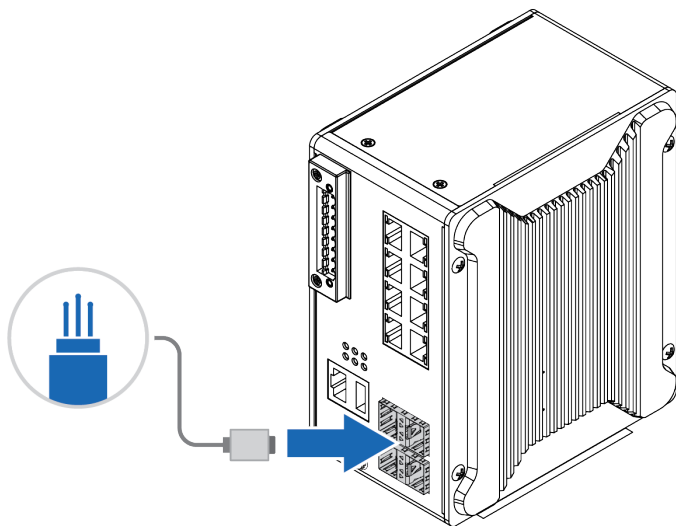
4.8   Connecting to Ethernet Network

Optional

Connect the switch to an Ethernet network.
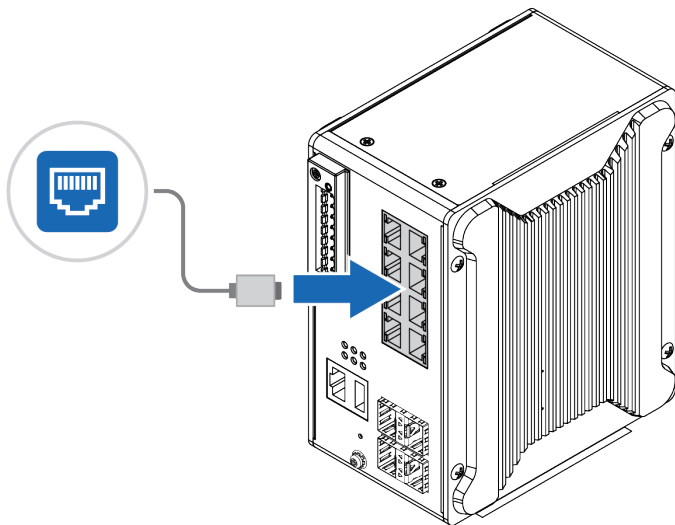
4.9   Connecting to Fiber Network

Optional

Connect the switch to a network via the *SFP port*.

5   Configuration

5.1   Before You Begin Configuration

The switch is configured through *web management* or *console management*.

$(\mathbf{i})$ *The switch default IP address is http://192.168.10.1/.*

$(\mathbf{i})$ *The default switch login user name and password is **admin**.*

5.2   Web Management

Prepare for configuring the switch settings via the web management interface.

Before You Begin

- ► Connect the switch to your computer.
- ► Connect the switch to power.
- ► To link your computer with the switch, make sure that the IP address of the computer is located in the same subnet as the switch default IP address.

Procedure

Access the web management interface:

1. In your browser, type **http://IP address** and press **Enter**.
    → The web-based management interface login screen appears.
2. In the login screen, enter user name and password.
3. Click **OK**.
    → The web-based management interface welcome page appears.
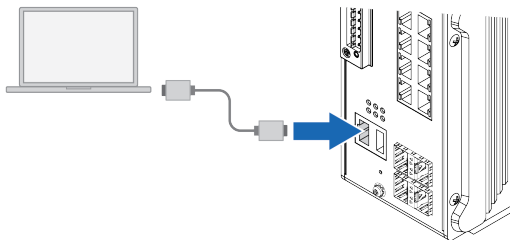
To Do Next

- ► Configure the switch.

    Follow the instructions in the user manual.

5.3   Console Management

Prepare for configuring the switch settings by console management.

Procedure

Connecting console cable:

1.   Connect a console cable between your computer and the *RS232 console* port.

Access the switch through console management:

2.   Go to Start ► Program ► Accessories ► Communication ► Hyper Terminal.

3.   Give the new console connection a name.

4.   Choose **COM name**.

5.   Select correct serial settings:
     –   Baud Rate: 115200
     –   Parity: None
     –   Data Bit: 8
     –   Stop Bit: 1

6.   In the login screen, enter user name and password.

To Do Next

►   Configure the switch with CLI Commands.

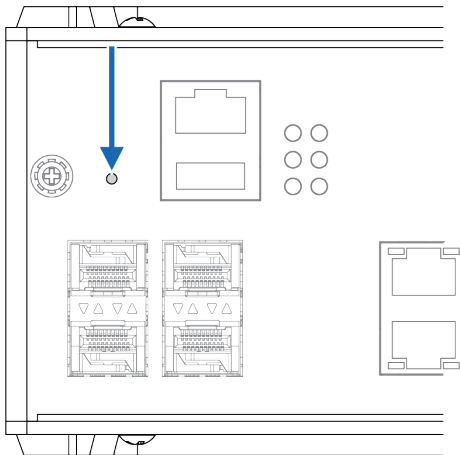   Follow the instructions in the user manual.

5.4   USB Port

Use the USB port in order to save or restore the configuration and upload the firmware upgrade file.
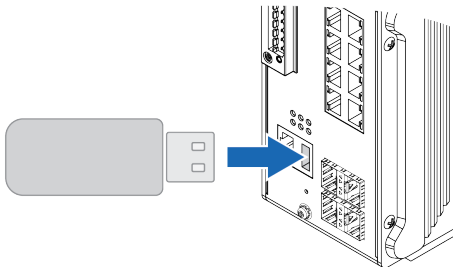
For further configurations, refer to the User Manual.

5.5   Factory Reset

Procedure

To reset the switch to its factory settings:

1. Ensure that the switch is powered on.
2. Use a pointed object (such as a ballpoint pen) to press and hold the **reset** button for >10 seconds.

Result

→   Once the **reset** button is released, the switch reboot automatically.

→   When the switch has successfully rebooted, the SYS LED turns green.

6   Verify Operation

When installation and configuration are completed, verify that the switch is in operation.
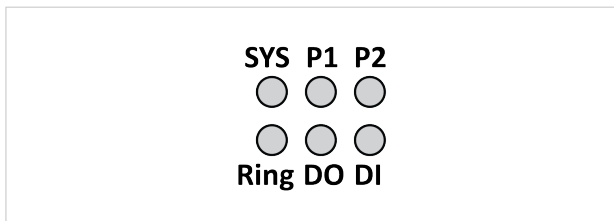
6.1   System LED Indicators

Fig. 1   System LED

LED	Status	Description
P1 and P2 Power	Green On	DC-IN Power is On
	Off	No Power in DC-IN
SYS System status	Green On	Ready
	Green blinking	Firmware updating
	Off	Not Ready
Ring Ring status	Green On	Not Owner/Normal
	Green blinking	Owner/Normal
	Amber On	Abnormal
	Amber blinking	Ring Port Failure
	Off	Ring is disabled
DO Alarm	Red On	Any failure in port link, ping, power, DO or DI State by SW control
	Off	No failure occurs
DI Digital Input	Green On	Detected Digital Input
	Off	No Digital Input

6.2   Ethernet LED Indicators
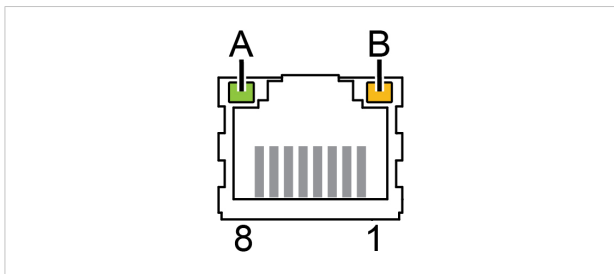
Fig. 2   RJ45 connector LED indicator

8–port 10/100/100 Base-T		
LED	**Status**	**Description**
A Status	Green On	Link established
	Green Blinking	Packets transmitting/receiving
	Green Off	Link is inactive
B Link/Activity	Amber On	Link Speed 1 Gbit/s
	Amber Off	Link speed 100 Mbit/s

6.3   SFP Port LED Indicators
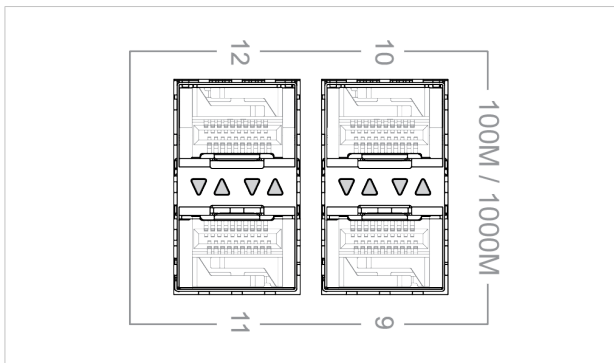
Fig. 3   **SFP Port LED Indicators**

4–port 100/1000 Base SFP, DDM		
LED	**Status**	**Description**
SFP Port	Green On	Link established
	Green blinking	Packets transmitting/receiving
	Green Off	Link is inactive
	Amber On	Link Speed 1 Gbit/s
	Amber Off	Link speed 100 Mbit/s

7 Technical Data

7.1 Technical Specifications

Order Codes	AWB5011
Ethernet	8 x 10/100/1000Base-T RJ-45 4 x 100/1000Base SFP, DDM
Console	1 x RS232 (RJ45) 115200.n.8.1
USB	1 x USB type A
Operating temperature	-40°C-75°C , 0%-95% Non- Condensing
Data speeds	10Base-TX: 14,880pps, 100Base-TX/FX: 148,800pps, 1000Base-TX/FX: 1,488,100pps
Operating voltage	24VDC (10-60VDC)
Power Consumption	Max 16.08W
Weight	1,38 kg
Housing material	Steel & aluminium
IP protection class	IP31
Dimensions	85.5 x 150 x 126.5 (W x H x D) without DIN Rail Clip
Mounting	DIN-rail
Configuration	CGI WebGUI, Command Line Interface (CLI), SNMP
Security	IEEE 802.1X/RADIUS, Private VLAN, ACL(MAC/IP filter), HTTPs/SSH secure login
Redundancy	Rapid Spanning Tree Protocol (RSTP)/Multiple Spanning Tree Protocol (MSTP) ITU-T G.8032 v1/v2 Ethernet Ring Protection Switching (ERPS) Virtual Router Redundancy Protocol (VRRP)
L3 Routing	Static/Dynamic IP Routing, VLAN Routing, RIP v1/v2, OSPF v1/v2, IGMP and Multicast Routing

Order Codes	AWB5011
Traffic Management	Flow Control, Port Trunk/802.3ad LACP, VLAN, Private VLAN, GVRP, GMRP, QinQ, QoS, IGMP Snooping v1/v2/v3, Rate Control, Storm
Network Management	IPv4/IPv6, SNMP v1/v2c/v3, RMON, LLDP, DHCP server/client/ Option 82, SysLog
Standards	IEC60950-1 Compliance, EN61000-6-2/EN61000-6-4, CISPR 22, FCC part 15B Class A, EN61000-4-2 ESD, EN61000-4-3 RS, EN61000-4-4 EFT, EN61000-4-5, EN61000-4-6 CS, EN61000-4-8 Magnetic Field, EN50121-4

For more information, refer to datasheet at www.anybus.com/support.