ENGLISH

Anybus® Communicator™ - Common Ethernet to Modbus RTU/Serial

STARTUP GUIDE

SP2953
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Important User Information

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Contact Information
Postal address:
Box 4126
300 04 Halmstad, Sweden

E-Mail: info@hms.se

1. Preface

1.1. About This Document

This document describes how to install Anybus® Communicator™.

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

1.2. Document Conventions

Safety Symbols

DANGER
Instructions that must be followed to avoid an imminently hazardous situation which, if not avoided, will result in death or serious injury.

WARNING
Instructions that must be followed to avoid a potential hazardous situation that, if not avoided, could result in death or serious injury.

CAUTION
Instruction that must be followed to avoid a potential hazardous situation that, if not avoided, could result in minor or moderate injury.

IMPORTANT
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.

Information Symbols

NOTE
Additional information which may facilitate installation and/or operation.

TIP
Helpful advice and suggestions.

1.3. Trademarks

Anybus® is a registered trademark of HMS Networks.

All other trademarks 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 layers 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.

CAUTION
This equipment contains parts that can be damaged by electrostatic discharge (ESD). Use ESD prevention measures to avoid damage.

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

IMPORTANT
Using the wrong type of power supply can damage the equipment. Ensure that the power supply is connected properly and of the recommended type.

3. Preparation

3.1. Cabling

Have the following cables available:

- Ethernet cable for configuration
- Ethernet cable for connecting to the high level network
- Power cable

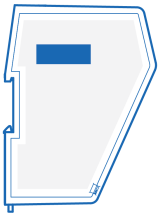
3.2. Mechanical Tools and Equipment

Have the following tools available:

- Flat-head screwdriver, size 5.5 mm
  Needed when removing the Communicator from DIN-rail.
- Flat-head screwdriver, size 3 mm
  Needed when connecting the cables to the 7-pin connector.

3.3. Support and Resources

For additional documentation and software downloads, FAQs, troubleshooting guides and technical support, please **scan the QR code to visit the Communicator support web page**.



You can also visit www.anybus.com/support and enter the product article number to search for the Communicator support web page. You find the **product article number** on the product cover.

3.4. HMS Software Applications

Download the software installation files and user documentation from www.anybus.com/support.

HMS IPconfig

NOTE
As an alternative, you can set a static IP address within the same IP address range as the Communicator IP address on the computer accessing the Communicator built-in web interface.

NOTE
HMS IPconfig is only available for Windows.

4. Installation

4.1. DIN Rail Mounting

IMPORTANT
The equipment must be electrically grounded through the DIN rail for EMC compliance. Make sure that the equipment is correctly mounted on the rail and that the rail is properly grounded.

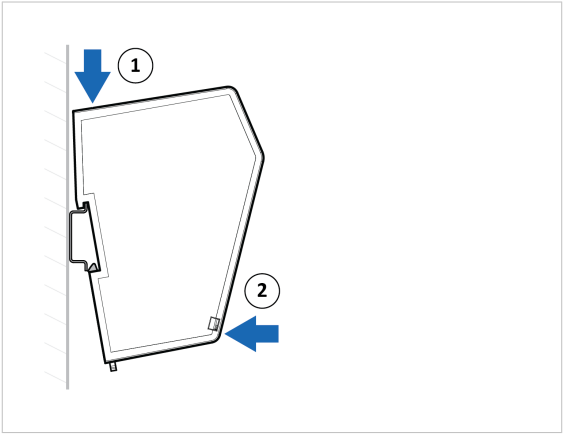


Figure 1. Attach the Communicator on the DIN rail

4.2. Connect to EtherNet/IP Network

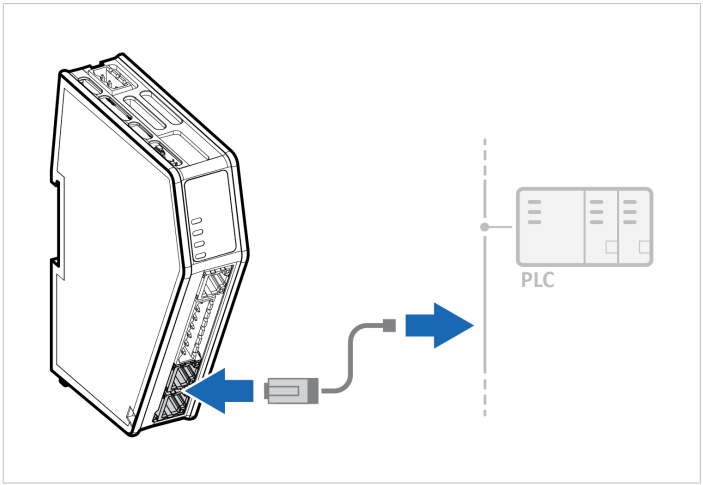
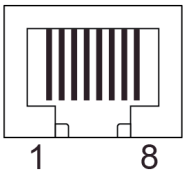


Figure 2. Connect to EtherNet/IP network

RJ45 Connector	Pin	Description
	1	TD+
	2	TD-
	3	RD+
	4	Not used
	5	Not used
	6	RD-
	7	Not used
	8	Not used

4.3. Connect to Serial RS232/RS485 Subnetwork

NOTE
Use minimum 90 oC copper (Cu) wire only.

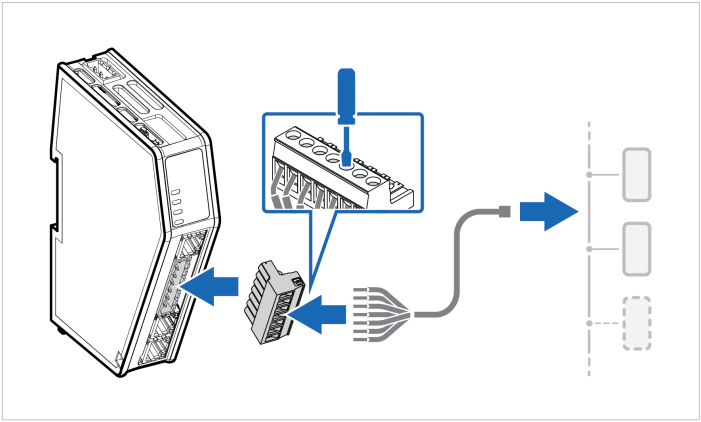
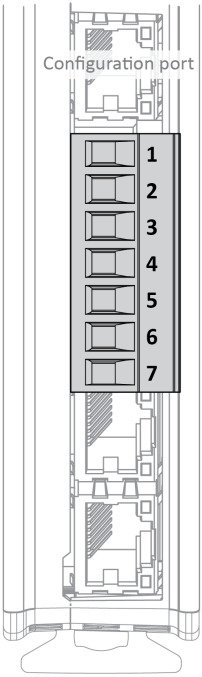


Figure 3. Connect to serial RS232/RS485 subnetwork

7-pin connector	Pin	Signal
	1	+5 V OUT
	2	RS485+ A
	3	RS485- B
	4	Signal GND
	5	Functional Earth (FE)
	6	RS232 Tx Transmit Data
	7	RS232 Rx Receive Data

4.4. Connect to Power

CAUTION
Ensure that the power supply is turned off before connecting it to the equipment.

IMPORTANT
Using the wrong type of power supply can damage the equipment. Ensure that the power supply is connected properly and of the recommended type.

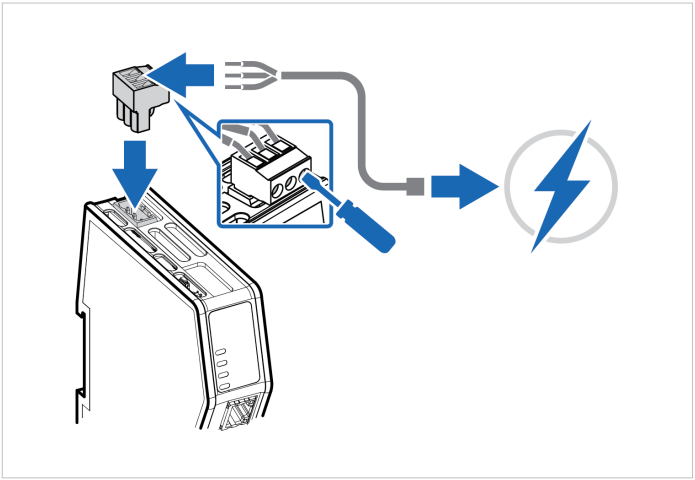
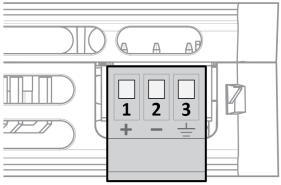


Figure 4. Connect to power

Power port	Pin	Description
	1	12-30 VDC Power Connector
	2	Ground (GND)
	3	Functional Earth (FE)

4.5. Security Switch

IMPORTANT
After completing the configuration of the Communicator, lock the security switch to prevent unauthorized access to the Communicator built-in web interface.

When the security switch is in its locked position, the Communicator built-in web interface can not be accessed and the Communicator can not be configured using the built-in web interface. Network specific parameters, configured via the PLC is still available.

To Lock and Unlock the Security Switch

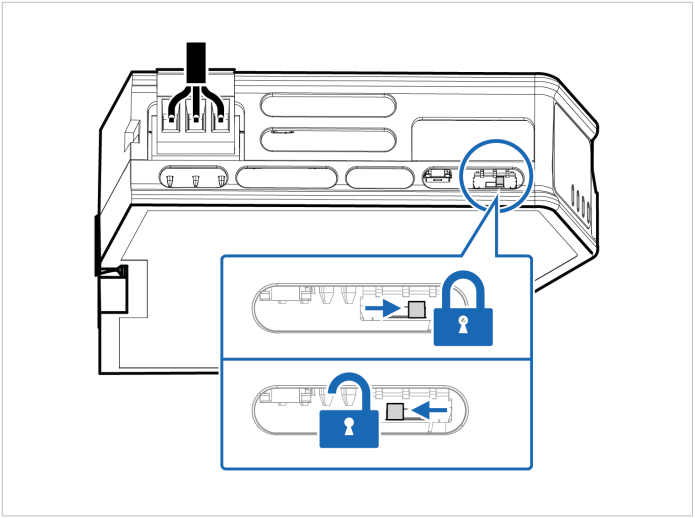


Figure 5. Security switch in locked and unlocked position

Use a pointed object, such as a ballpoint pen.

- To **lock** the security switch, push the toggle towards the **Communicator front**.
- To **unlock** the security switch, push the toggle towards the **Communicator back**.

Security Switch Status LED

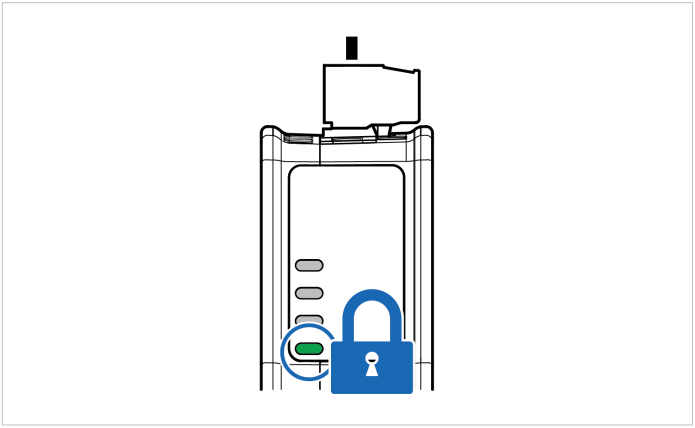


Figure 6. Security switch locked status LED

When the security switch is in its:

- locked position, the security switch status LED turn solid green.
- unlocked position, the security switch status LED is turned off.

4.6. Lock the Cables

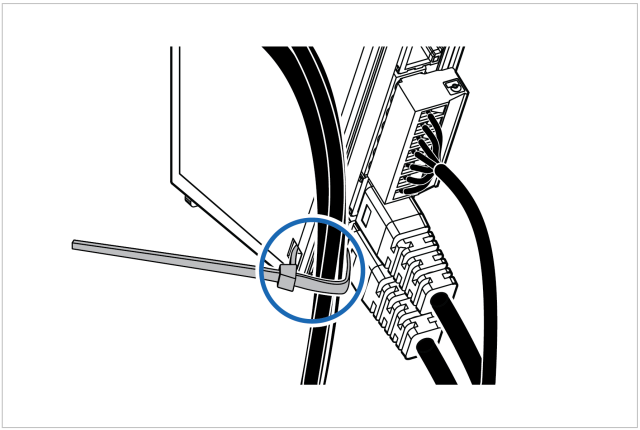


Figure 7. Lock the cables

To strain relieve the cables, place a cable tie in the holder and lock the cables.

4.7. DIN Rail Demount

Before You Begin

IMPORTANT
Be careful when removing the Communicator from the DIN-rail. If not removed properly, the DIN rail locking mechanism and the product cover can break.

Have a flat-blade screwdriver, size 5.5 mm, available.

Procedure

Remove the Communicator from the DIN Rail:

1. Insert the screwdriver into the Communicator DIN rail locking mechanism.
2. To unlock the Communicator DIN rail locking mechanism, turn the screwdriver clockwise.

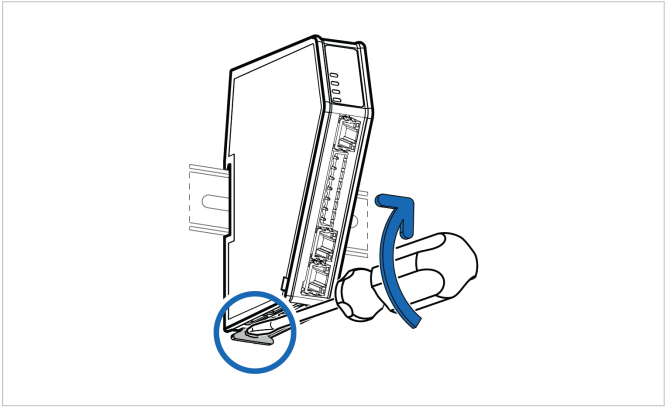


Figure 8. Unlock the Communicator

3. Hold the screwdriver in the DIN rail locking mechanism while you unhook the Communicator from the DIN rail.

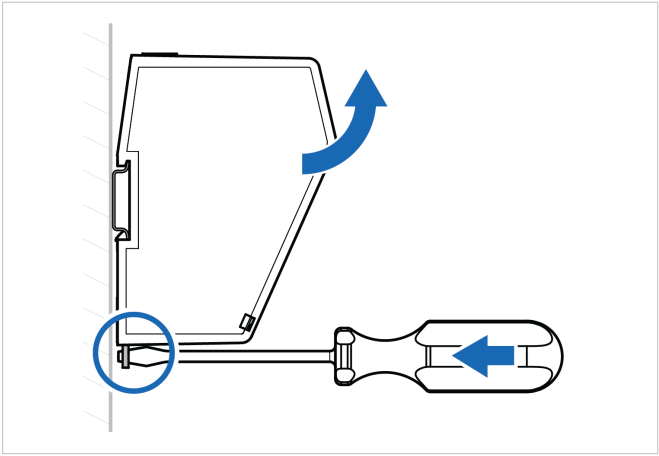


Figure 9. Unhook the Communicator

5. Configuration

5.1. Connect to PC and Power

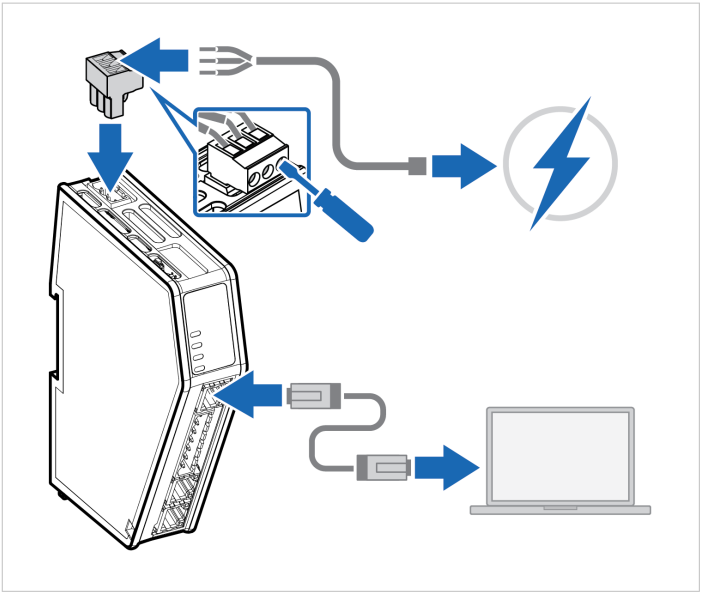


Figure 10. Connect to PC and Power

1. Connect an Ethernet cable between the Communicator configuration port and your PC.
2. Connect the Communicator to a power supply.

5.2. Find the Communicator on Your PC

The Communicator default IP address is 192.168.0.10.

To be able to access the Communicator built-in web interface you may need to adjust the IP settings, choose one of the following methods:

Option 1 | Set a static IP address on the PC

On the PC accessing the Communicator built-in web interface, set a static IP address within the same IP address range as the Communicator IP address.

To access the Communicator built-in web interface, ensure that port Port 80 TCP is open in your PC Windows Firewall.

Note that when you change to a static IP address on your PC, internet access is lost.

Option 2 | Change the IP address on the Communicator configuration port

Use the software application HMS IPconfig to find and change the IP address on the Communicator configuration port, to one within the same IP address range as the PC accessing the Communicator built-in web interface.

To download the installation files, please visit www.anybus.com/support and enter the product article number to search for the Communicator support web page. You find the product article number on the product cover.

5.3. Configure the Communicator

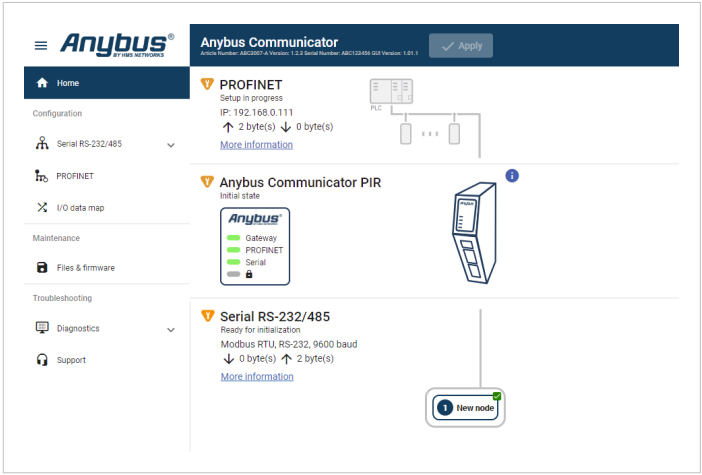


Figure 11. Communicator built-in web interface

By default, the Common Ethernet Communicator is preconfigured with the EtherNet/IP™ to PROFINET IO networks.

Download files and access the Communicator built-in web interface

1. Download firmware files and documentation.
   To download firmware files and user documentation for the desired Communicator network version, visit www.anybus.com/support and navigate to the **Common Ethernet Communicator ABC3090** product page.
2. Open the Communicator built-in web interface.
   You can open the built-in web interface in HMS IPconfig or by entering the Communicator IP address in your web browser.

Change the preconfigured networks

1. In the **Files & firmware** page **Firmware management** section, click **Upload**.
2. In the Upload Firmware window, click **Select firmware (.hiff)**.
3. In the Open dialog box, browse to and select the firmware file and click **Open**.
4. To start the firmware upgrade, click **Update firmware.**
   - The firmware file is validated and transferred.
   - The Communicator reboots and is reset to the factory default settings for the Communicator network variant you have updated to.

Configure the Communicator

1. Open the Communicator built-in web interface.
   You can open the built-in web interface in HMS IPconfig or by entering the Communicator IP address in your web browser.
2. The built-in web interface takes you through the steps to configure the Communicator.
   For in-depth information about the configuration, refer to the user manual for the installed Communicator network variant.

6. Technical Data

For complete technical specifications and regulatory compliance information, please visit www.anybus.com.

6.1. Technical Specifications

Article identification	ABC3090
Configuration connector	RJ45
Communication connector	RJ45 x 2
Serial connector	7-pin screw connector
Power connector	3-pin screw connector
Power supply	12-30 VDC, Reverse voltage protection and short circuit protection
Power consumption	Typical: 160 mA @ 24 V Max: 400 mA @ 12 V
Storage temperature	-40 to +85 °C
Operating temperature	-25 to +70 °C
Humidity	EN 600068-2-78: Damp heat, +40°C, 93% humidity for 4 days EN 60068-2-30: Damp heat, +25°C – +55°C, 95% RH, 2 cycles
Vibration	See datasheet
Housing material	Plastic, See datasheet for details
Protection class	IP20
Product weight	150 g
Dimensions	27 x 144 x 98 mm (W x H x D) with connectors included
Mounting	DIN-rail

7. Communicator LED Indicators

NOTE
Before you can verify operation you must configure the Communicator.

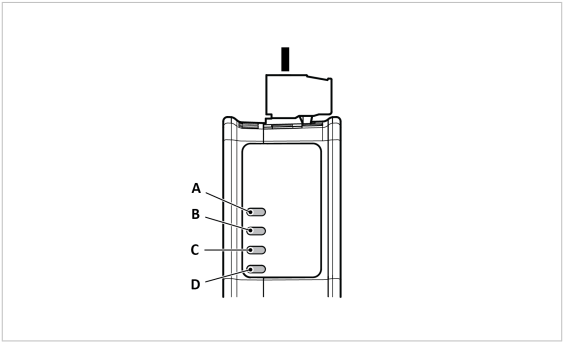


Figure 12. Communicator status (A), High level Network/Client (B), Subnetwork 2 (C) and (D) Security Switch

	LED A	LED B	LED C	LED D
Operation status	**Gateway status**	**High level Network/ Client**	**Subnetwork**	**Security switch**
Off	No power	No power/No IP address	No power/ Subnetwork not running	No power/Security switch is unlocked
Green, flashing	Startup phase	Modbus TCP online, no messages received	Running, one or more nodes are offline	N/A
Green, solid	Operational	Modbus TCP online, at least one message received	Running	Security switch is locked

	LED A	LED B	LED C	LED D
Operation status	**Gateway status**	**High level Network/ Client**	**Subnetwork**	**Security switch**
Red, solid	N/A	IP address conflict detected, or Fatal error	N/A	N/A
Red, flashing	Invalid configuration	Connection timeout	All nodes are offline	N/A
Green/Red, flashing	Power up self-test/ Firmware update/ Firmware recovery	N/A	N/A	N/A

*The EtherCAT RUN (green) and ERROR (red) LED behaviors are combined in LED (C)/(D). This can cause LED (C)/(D) to alternate between red and green. The LED behavior still represents the states described in the table above.

Fatal Error and Exception Error

Fatal error: A fatal error causes the Communicator firmware application to crash in an uncontrolled manner.

Exception error: An exception error causes the Communicator to enter a controlled error state. The Communicator firmware application is still running.

LED	Fatal error	Exception error
A	Red, solid	Red, solid
B	Red, solid	Off
C	Red, solid	Off
D	Off	Off

8. Ethernet LED Indicators

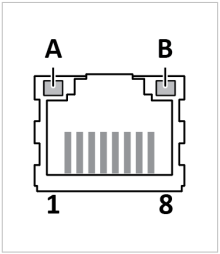


Figure 13. LED A. Activity LED B. Not used

LED A	Function
Off	No link (or no power)
Green	Link (100 Mbit/s) established
Green, flashing	Activity (100 Mbit/s)
Yellow	Link (10 Mbit/s) established
Yellow, flashing	Activity (10 Mbit/s)

LED B	Function
Off	Not used

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