

Anybus[®] Communicator[™]

Common Ethernet to Modbus RTU/Serial

STARTUP GUIDE

SP2953 1.0 en-US ENGLISH



Important User Information

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1 Preface

1.1 About This Document

This manual describes the installation of Anybus Communicator. For information on how to configure the Anybus Communicator, refer to the user manual.

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

1.2 Document Conventions

Numbered lists indicate tasks that should be carried out in sequence:

1. First do this
2. Then do this

Bulleted lists are used for:

- Tasks that can be carried out in any order
- Itemized information
- ▶ An action
 - and a result

User interaction elements (buttons etc.) are indicated with bold text.

```
Program code and script examples
```

Cross-reference within this document: [Document Conventions, p. 4](#)

External link (URL): www.hms-networks.com



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 Networks AB.

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.



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 Tools

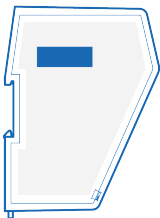
Have the following tools available:

- **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.

4 Installation

4.1 DIN Rail Mounting



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.

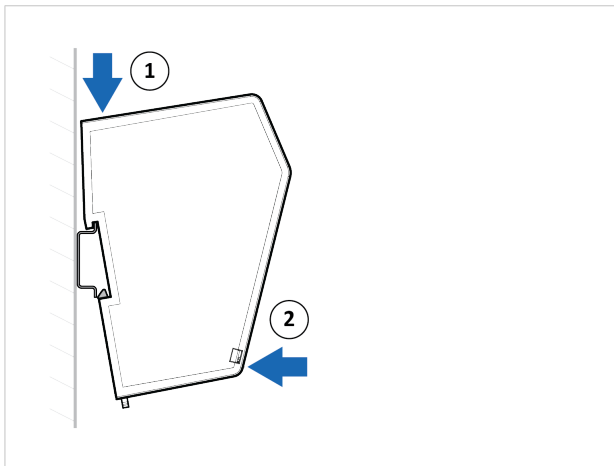


Fig. 1

Attach the Communicator on the DIN rail.

4.2 Connecting to EtherNet/IP Network

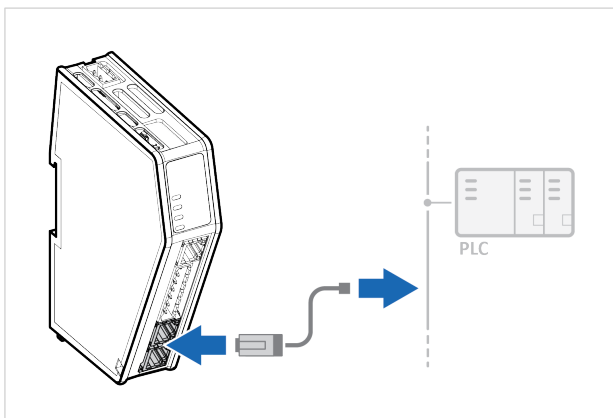
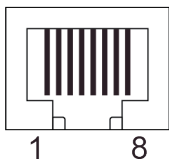


Fig. 2

EtherNet/IP Connector



Pin	Description
1	TD+
2	TD-
3	RD+
4	
5	
6	RD-
7	
8	

4.3 Connecting to Serial RS232/RS485 Subnetwork



Use minimum 90 μ C copper (Cu) wire only.

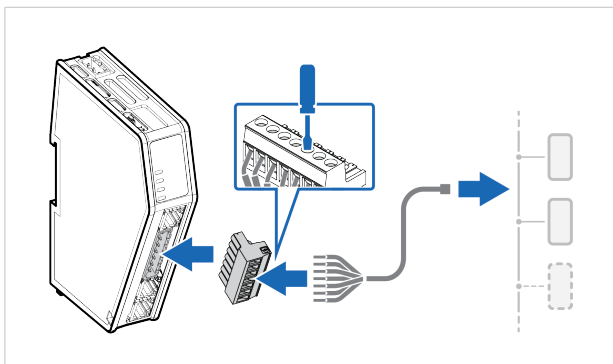


Fig. 3

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 Output
7	RS232 Rx Input

4.4 Connecting to Power



Caution

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



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

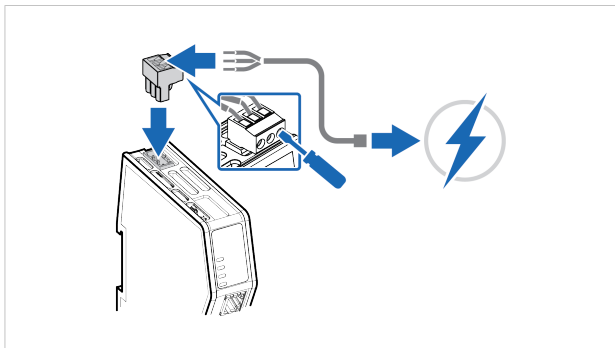
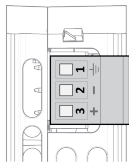


Fig. 4

Power port



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

4.5 Security Switch



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. Network specific parameters, configured via the PLC is still available.

To Lock and Unlock the Security Switch

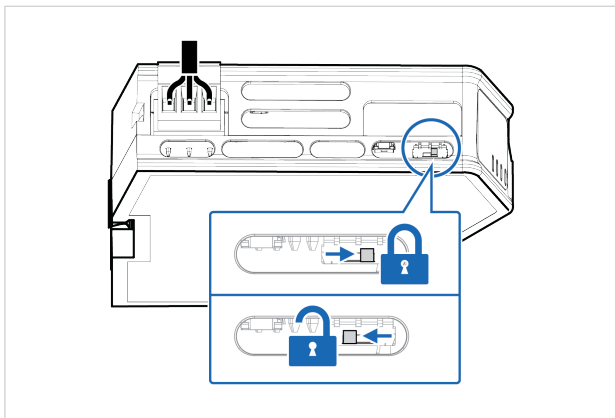


Fig. 5 Security switch in locked and unlocked position

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

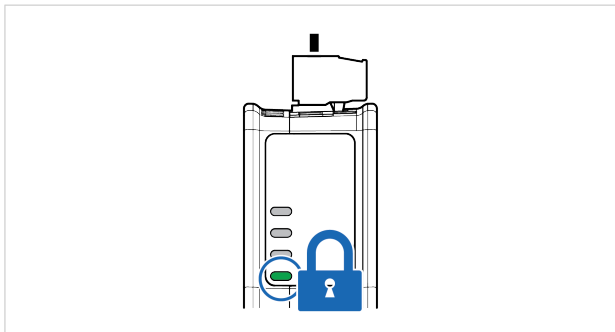


Fig. 6 Security switch locked status LED

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 Locking the Cables

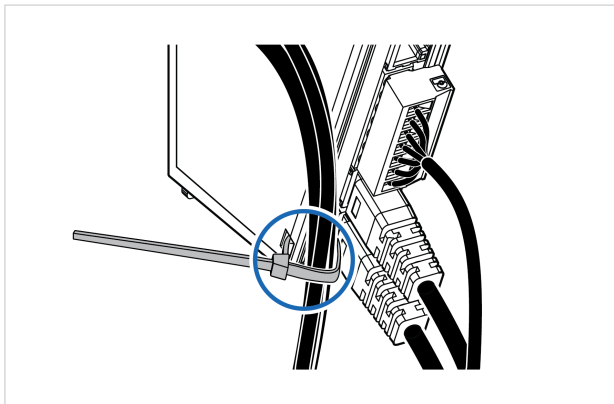


Fig. 7

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

4.7 DIN Rail Demount

Before You Begin



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.

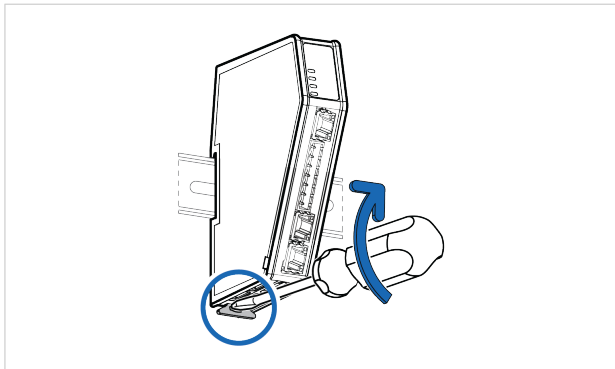


Fig. 8

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

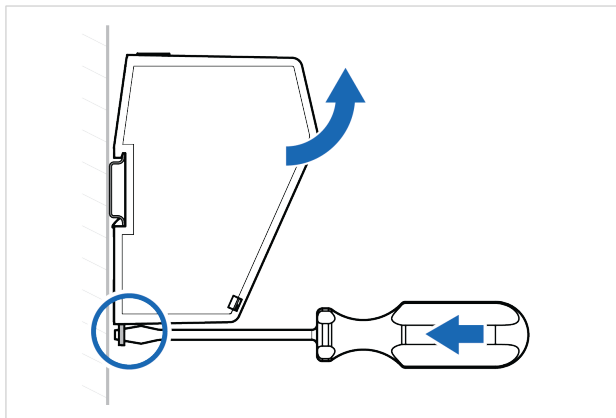


Fig. 9

5 Configuration

5.1 Connecting to PC and Power

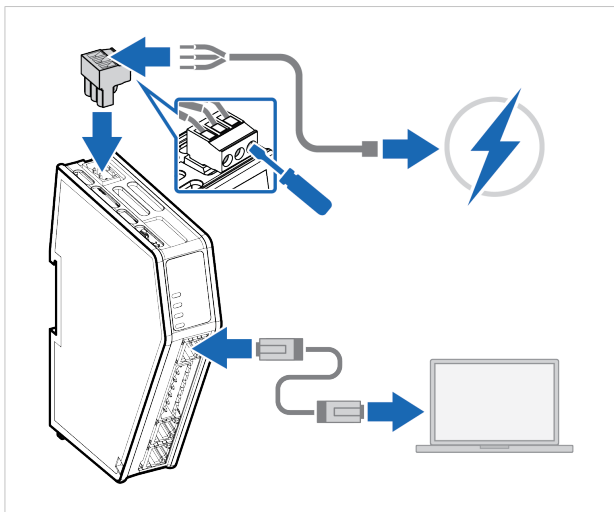


Fig. 10

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

5.2 Finding 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:

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 Configuring the Communicator

The screenshot displays the Anybus Communicator web interface. The top navigation bar includes the Anybus logo, the title 'Anybus Communicator', and an 'Apply' button. A left sidebar contains a 'Home' button and a 'Configuration' section with options for 'Serial RS-232/485', 'Modbus TCP', and 'I/O data map'. Below this are 'Maintenance' (Files & firmware) and 'Troubleshooting' (Diagnostics, Support) sections. The main content area is divided into three sections: 1. 'Modbus TCP' (Setup in progress, IP: 192.168.0.111, 2 bytes up, 0 bytes down) with a network diagram showing a PLC connected to other nodes. 2. 'Anybus Communicator' (Initial state) with a status legend for Gateway, Modbus TCP, and Serial, and a physical device image. 3. 'Serial RS-232/485' (Ready for initialization, 9600 baud, 0 bytes down, 2 bytes up) with a 'New node' indicator.

Fig. 11

By default, the Common Ethernet Communicator is preconfigured with the Modbus TCP firmware variant.

Procedure

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.

3. **Change the Communicator network variant.**
 - a. In the Files & firmware page Firmware management section, click **Upload**.
 - b. In the Upload Firmware window, click **Select firmware (.hiff)**.
 - c. In the Open dialog box, browse to and select the firmware file and click **Open**.
 - d. 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.

4. **Configure the Communicator.**
 - a. 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.
 - b. 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

6.1 Technical Specifications

Article identification	ABC3090
Communication connector	RJ45 x 2
Configuration connector	RJ45
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 60068-2-78: 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 (H x W x D) with connectors included
Mounting	DIN-rail

Additional technical data and information related to the installation and use of this product can be found at www.anybus.com/support.

A Communicator LED Indicators

This LED guide describes the LED indications for Modbus TCP. For information about other networks, refer to the user manual for the desired Communicator network variant.

Before you can verify operation you must configure the Communicator.

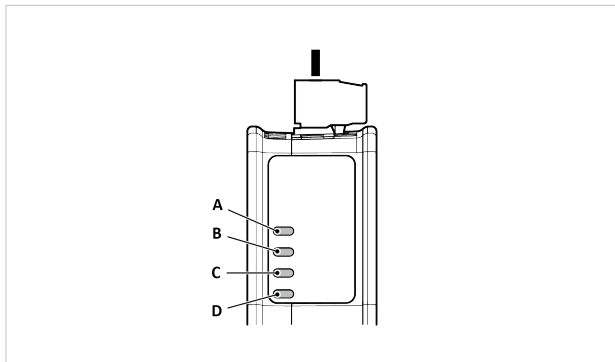


Fig. 12 Communicator status (A), High level Network/Client (B), Subnetwork 2 (C) and (D) Security Switch

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

	LED A	LED B	LED C	LED D
Operation Status	Gateway status	High level Network/Client	Subnetwork	Security switch
		one message received.		
Red	Exception/ Fatal error	IP address conflict detected, or Fatal error.	Fatal error	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

B Ethernet LED Indicators

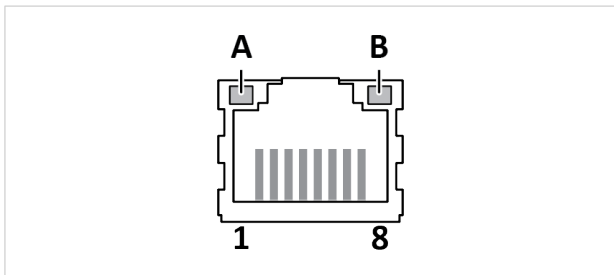


Fig. 13 LED A. Activity LED B. Not used

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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SP2953 1.0 en-US / 2021-06-04 / 22705