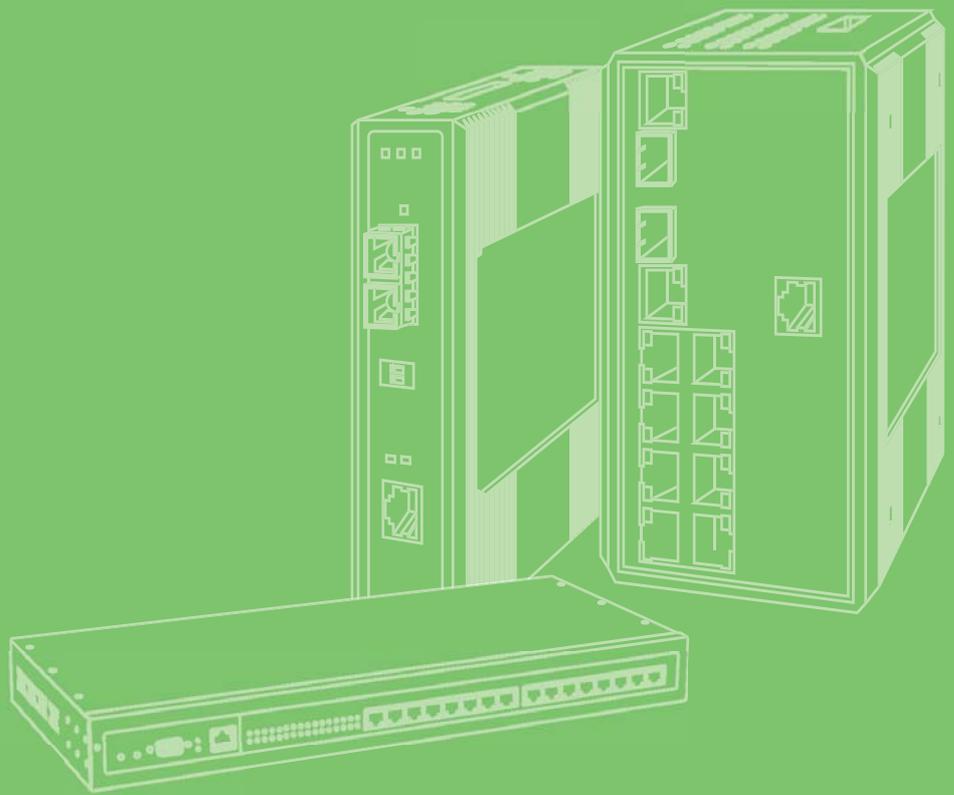


User Manual



EKI-1242NR Series

Node-RED Fieldbus Gateway

ADVANTECH

Enabling an Intelligent Planet

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5. Write the RMA number visibly on the outside of the package and ship it prepaid to your dealer.

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Declaration of Conformity

CE

This product has passed the CE test for environmental specifications. Test conditions for passing included the equipment being operated within an industrial enclosure. In order to protect the product from being damaged by ESD (Electrostatic Discharge) and EMI leakage, we strongly recommend the use of CE-compliant industrial enclosure products.

FCC Class A

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Technical Support and Assistance

1. Visit the Advantech web site at www.advantech.com/support where you can find the latest information about the product.
2. Contact your distributor, sales representative, or Advantech's customer service center for technical support if you need additional assistance. Please have the following information ready before you call:
 - Product name and serial number
 - Description of your peripheral attachments
 - Description of your software (operating system, version, application software, etc.)
 - A complete description of the problem
 - The exact wording of any error messages

Warnings, Cautions, and Notes

Warning! Warnings indicate conditions, which if not observed, can cause personal injury!



Caution! Cautions are included to help you avoid damaging hardware or losing data. e.g.



There is a danger of a new battery exploding if it is incorrectly installed. Do not attempt to recharge, force open, or heat the battery. Replace the battery only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.

Note! Notes provide optional additional information.



Document Feedback

To assist us in making improvements to this manual, we would welcome comments and constructive criticism. Please send all such - in writing to:
support@advantech.com

Packing List

Before setting up the system, check that the items listed below are included and in good condition. If any item does not accord with the table, please contact your dealer immediately.

- 1 x Fieldbus gateway
- 1 x DIN-Rail mounting bracket and screws
- 1 x Wall-mounting bracket

Safety Instructions

- Read these safety instructions carefully.
- Keep this User Manual for later reference.
- Disconnect this equipment from any DC outlet before cleaning. Use a damp cloth. Do not use liquid or spray detergents for cleaning.
- For plug-in equipment, the power outlet socket must be located near the equipment and must be easily accessible.
- Keep this equipment away from humidity.
- Put this equipment on a reliable surface during installation. Dropping it or letting it fall may cause damage.
- The openings on the enclosure are for air convection. Protect the equipment from overheating. **DO NOT COVER THE OPENINGS.**
- Make sure the voltage of the power source is correct before connecting the equipment to the power outlet.
- Position the power cord so that people cannot step on it. Do not place anything over the power cord.
- All cautions and warnings on the equipment should be noted.
- If the equipment is not used for a long time, disconnect it from the power source to avoid damage by transient overvoltage.
- Never pour any liquid into an opening. This may cause fire or electrical shock.
- Never open the equipment. For safety reasons, the equipment should be opened only by qualified service personnel.
- If one of the following situations arises, get the equipment checked by service personnel:
 - The power cord or plug is damaged.
 - Liquid has penetrated into the equipment.
 - The equipment has been exposed to moisture.
 - The equipment does not work well, or you cannot get it to work according to the user's manual.
 - The equipment has been dropped and damaged.
 - The equipment has obvious signs of breakage.
- **DO NOT LEAVE THIS EQUIPMENT IN AN ENVIRONMENT WHERE THE STORAGE TEMPERATURE MAY GO -40°C (-40°F) ~ 75°C (167°F). THIS COULD DAMAGE THE EQUIPMENT. THE EQUIPMENT SHOULD BE IN A CONTROLLED ENVIRONMENT.**
- The sound pressure level at the operator's position according to IEC 704-1:1982 is no more than 70 dB (A).

DISCLAIMER: This set of instructions is given according to IEC 704-1. Advantech disclaims all responsibility for the accuracy of any statements contained herein.

Safety Precaution - Static Electricity

Static electricity can cause bodily harm or damage electronic devices. To avoid damage, keep static-sensitive devices in the static-protective packaging until the installation period. The following guidelines are also recommended:

- Wear a grounded wrist or ankle strap and use gloves to prevent direct contact with the device before servicing the device. Avoid nylon gloves or work clothes, which tend to build up a charge.
- Always disconnect the power from the device before servicing it.
- Before plugging a cable into any port, discharge the voltage stored on the cable by touching the electrical contacts to the ground surface.

Contents

Chapter 1	Product Overview	1
1.1	Specifications	2
1.2	Hardware Views	3
1.2.1	Front View	3
1.2.2	Rear View	4
1.2.3	Top View	4
1.2.4	Bottom View	5
1.2.5	LED Indicators	5
1.3	Dimensions	6
Chapter 2	Fieldbus Gateway Installation	7
2.1	Installation Guidelines	8
2.1.1	Connecting Hardware	8
2.2	Verifying Fieldbus Gateway Operation	8
2.3	Installing the Fieldbus Gateway	9
2.3.1	DIN Rail Mounting	9
2.3.2	Wall-Mounting	11
2.4	Connecting the Fieldbus Gateway to Ethernet Ports	13
2.4.1	RJ45 Ethernet Cable Wiring	13
2.5	Serial Connection	13
2.6	MicroSD Card Installation	14
2.6.1	Installing a MicroSD Card	14
2.6.2	Utilizing a MicroSD Card	15
2.7	Power Supply Installation	16
2.7.1	Overview	16
2.7.2	Considerations	17
2.7.3	Grounding the Device	17
2.7.4	Wiring a Relay Contact	18
2.7.5	Wiring the Power Inputs	18
2.8	Default Button	20
Chapter 3	Managing Fieldbus Gateway	21
3.1	Log In	22
3.1.1	Changing Default Password	22
3.2	Overview	23
3.2.1	Device Information	23
3.3	Network Setting	24
3.3.1	IP Setting	24
3.4	Serial Settings	25
3.4.1	Port	25
3.5	Protocol Setting	26
3.5.1	Node-RED Setting	26
3.5.2	Node-RED Library	27
3.6	System Management	28
3.6.1	Change Password	28
3.6.2	Backup Manager	29
3.6.3	Upgrade Manager	30
3.6.4	Reset System	30
3.6.5	Reboot Device	30
3.6.6	Apply Configuration	31

List of Figures

Figure 1.1	Front View	3
Figure 1.2	Rear View	4
Figure 1.3	Top View.....	4
Figure 1.4	Bottom View	5
Figure 1.5	Dimensions.....	6
Figure 2.1	Installing the DIN-Rail Mounting Kit.....	9
Figure 2.2	Correctly Installed DIN Rail Kit	10
Figure 2.3	Removing the DIN-Rail.....	10
Figure 2.4	Installing Wall Mount Plates	11
Figure 2.5	Wall Mounting Screw Dimensions	12
Figure 2.6	Wall Mount Installation	12
Figure 2.7	Ethernet Plug & Connector Pin Position.....	13
Figure 2.8	DB 9 Pin Position.....	13
Figure 2.9	Removing the Component Cover Screw	14
Figure 2.10	Opening the Component Cover.....	14
Figure 2.11	Installing the MicroSD Card.....	14
Figure 2.12	Closing the Component Cover	15
Figure 2.13	Installing the Component Cover Screw	15
Figure 2.14	Power Wiring for EKI-1242NR Series.....	16
Figure 2.15	Grounding Connection.....	18
Figure 2.16	Terminal Receptor: Relay Contact	18
Figure 2.17	Terminal Receptor: Power Input Contacts.....	19
Figure 2.18	Removing a Terminal Block.....	19
Figure 2.19	Installing DC Wires in a Terminal Block	19
Figure 2.20	Securing a Terminal Block to a Receptor	20
Figure 3.1	Login Screen	22
Figure 3.2	Changing a Default Password	22
Figure 3.3	Overview > Device Information.....	23
Figure 3.4	Network Setting > IP Setting.....	24
Figure 3.5	Serial Settings > Port 1/Port 2	25
Figure 3.6	Protocol Setting > Node-RED Setting.....	26
Figure 3.7	Protocol Setting > Node-RED Library.....	27
Figure 3.8	System Management > Change Password	28
Figure 3.9	System Management > Backup Manager	29
Figure 3.10	System Management > Upgrade Manager.....	30
Figure 3.11	System Management > Reset System	30
Figure 3.12	System Management > Reboot Device	30
Figure 3.13	System Management > Apply Configuration	31

Chapter 1

Product Overview

1.1 Specifications

Specifications	Description	
Interface	I/O Port	4 x Ethernet + 2 x RS-232/422/485
	Power Connector	6-pin removable screw terminal (power & relay)
	MicroSD Card	Configuration backup and restore
Physical	Enclosure	Metal with solid mounting hardware
	Installation	DIN-rail, wall mount
	Dimensions (W x H x D)	42 x 140 x 95mm (1.66" x 5.52" x 3.75")
LED Display	System LED	P1, P2, Status
	Protocol LED	LED1, LED2
	Port LED	<ul style="list-style-type: none"> ■ LAN: Speed, Link/Active, Error ■ Serial: Tx, Rx
Environment	Operating Temperature	-10°C ~ 60°C (14°F ~ 140°F) "I" models: -40°C ~ 75°C (-40°F ~ 167°F)
	Storage Temperature	-40°C ~ 85°C (-40°F ~ 185°F)
	Ambient Relative Humidity	10 ~ 95% (non-condensing)
Power	Power Consumption	5.2W
	Power Input	12 ~ 48 V _{DC} , redundant dual power inputs
Certifications	EMC	CE, FCC Part 15 Subpart B (Class A)
Software	Node-RED version	v0.17.5

1.2 Hardware Views

1.2.1 Front View

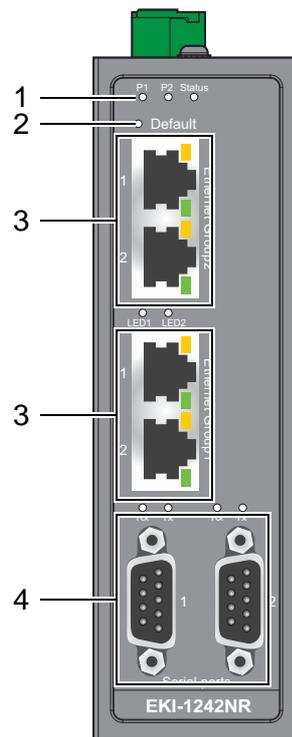


Figure 1.1 Front View

No.	Item	Description
1	System LED panel	See "LED Indicators" on page 5 for further details.
2	Default	Press and hold 2 seconds to restart device. Press and hold 10 seconds to reset to factory default.
3	ETH ports	RJ45 ports for Ethernet.
4	Serial ports	DB9 pinout supports RS232/422/485.

1.2.2 Rear View

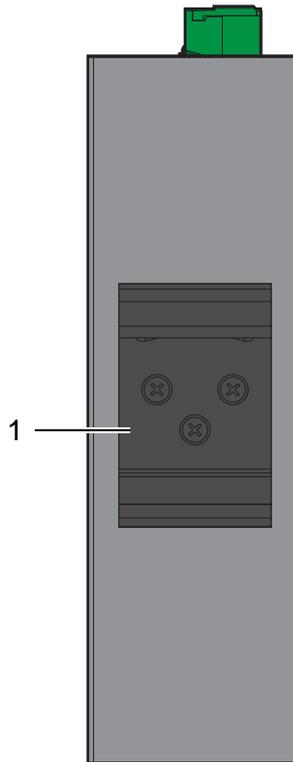


Figure 1.2 Rear View

No.	Item	Description
1	DIN-Rail mounting plate	Mounting plate used for the installation to a standard DIN rail.

1.2.3 Top View

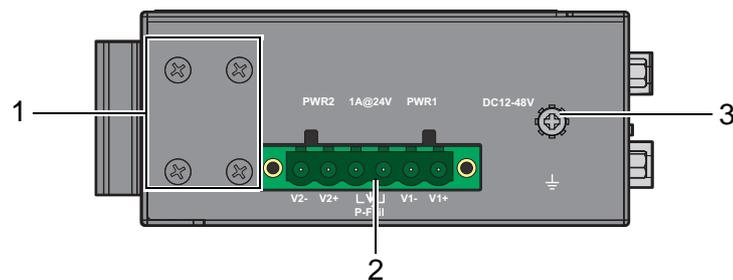


Figure 1.3 Top View

No.	Item	Description
1	Wall mounting screws	Screws (x4) used in the installation of a wall mounting plate.
2	Terminal block	Connect cabling for power and alarm wiring.
3	Ground terminal	Screw terminal used on ground chassis.

1.2.4 Bottom View

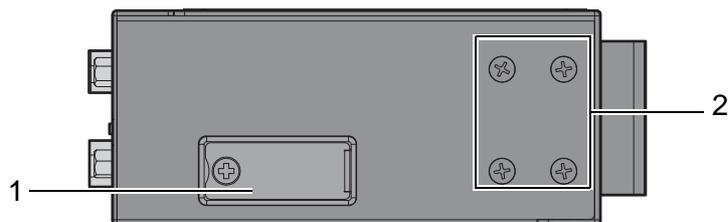


Figure 1.4 Bottom View

No.	Item	Description
1	Component cover	Open to access the microSD card port (only supports FAT32 or exFAT file system).
2	Wall mounting screws	Screws (x4) used in the installation of a wall mounting plate.

1.2.5 LED Indicators

LED Name	LED Color	Description
P1	Green	Power 1 is ON.
	Off	Power 1 is off or power error condition exists.
P2	Green	Power 2 is ON.
	Off	Power 2 is off or power error condition exists.
Status	Orange	<ul style="list-style-type: none"> ■ Blinking: System is ready. ■ Solid: <ul style="list-style-type: none"> – Restore config from SD card successfully to factory default state during booting. – Backup config to SD card successfully during booting.
		Off
	LED1, LED2	
Serial (Rx, Tx)	Orange	Serial port is receiving data.
	Green	Serial port is transmitting data.
	Off	No data is transmitted nor received through the serial port.

1.3 Dimensions

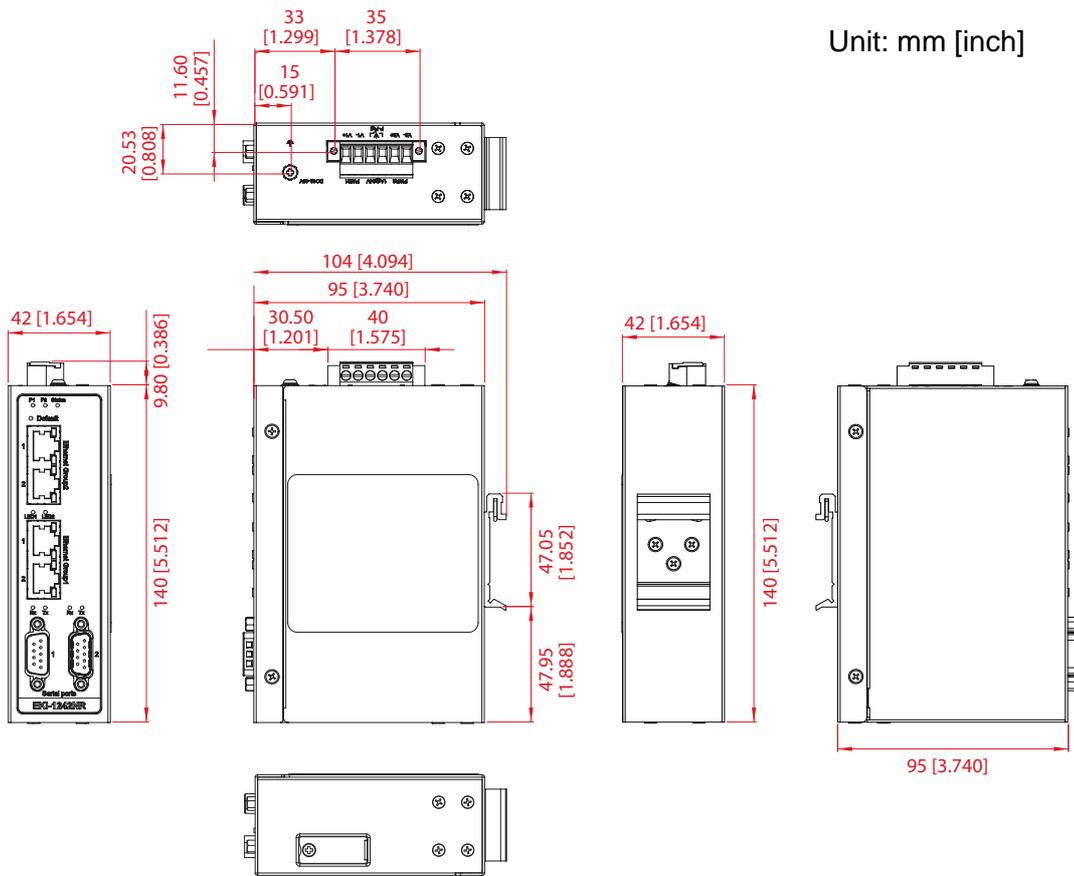


Figure 1.5 Dimensions

Chapter 2

Fieldbus Gateway Installation

2.1 Installation Guidelines

The following guidelines are provided to optimize the device performance. Review the guidelines before installing the device.

- Make sure cabling is away from sources of electrical noise. Radios, power lines, and fluorescent lighting fixtures can interference with the device performance.
- Make sure the cabling is positioned away from equipment that can damage the cables.
- Operating environment is within the ranges listed range, see “Specifications” on page 2.
- Relative humidity around the fieldbus gateway does not exceed 95 percent (noncondensing).
- Altitude at the installation site is not higher than 10,000 feet.
- In 10/100 and 10/100/1000 fixed port devices, the cable length from the fieldbus gateway to connected devices can not exceed 100 meters (328 feet).
- Make sure airflow around the fieldbus gateway and respective vents are unrestricted. Without proper airflow, the fieldbus gateway can overheat. To prevent performance degradation and damage to the fieldbus gateway, make sure there is clearance at the top and bottom and around the exhaust vents.

2.1.1 Connecting Hardware

In this instruction, it will explain how to find a proper location for your Fieldbus Gateways, and how to connect to the network, hook up the power cable, and connect to the EKI-1242NR Series.

2.2 Verifying Fieldbus Gateway Operation

Before installing the device in a rack or on a wall, power on the fieldbus gateway to verify that the fieldbus gateway passes the power-on self-test (POST). To connect the cabling to the power source see “Power Supply Installation” on page 16.

At startup (POST), the System LED blinks green, while the remaining LEDs are a solidly green. Once the fieldbus gateway passes POST self-test, the System LED turns green. The other LEDs turn off and return to their operating status. If the fieldbus gateway fails POST, the System LED fieldbus gateways to an amber state.

After a successful self-test, power down the fieldbus gateway and disconnect the power cabling.

The fieldbus gateway is now ready for installation on its final location.

2.3 Installing the Fieldbus Gateway

2.3.1 DIN Rail Mounting

The DIN rail mount option is the quickest installation option. Additionally, it optimizes the use of rail space.

The metal DIN rail kit is secured to the rear of the fieldbus gateway. The device can be mounted onto a standard 35 mm (1.37") x 7.5 mm (0.3") height DIN rail. The devices can be mounted vertically or horizontally. Refer to the following guidelines for further information.

Note! A corrosion-free mounting rail is advisable.



When installing, make sure to allow for enough space to properly install the cabling.

2.3.1.1 Installing the DIN-Rail Mounting Kit

1. Position the rear panel of the fieldbus gateway directly in front of the DIN rail, making sure that the top of the DIN rail clip hooks over the top of the DIN rail, as shown in the following illustration.

Warning! Do not install the DIN rail under or in front of the spring mechanism on the DIN rail clip to prevent damage to the DIN rail clip or the DIN rail.



Make sure the DINrail is inserted behind the spring mechanism.

2. Once the DIN rail is seated correctly in the DIN rail clip, press the front of the fieldbus gateway to rotate the fieldbus gateway down and into the release tab on the DIN rail clip.

If seated correctly, the bottom of the DIN rail should be fully inserted in the release tab.

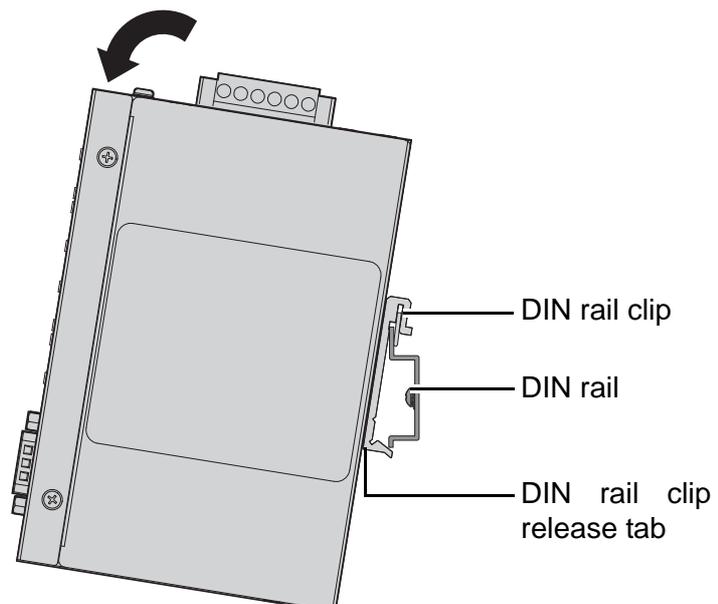


Figure 2.1 Installing the DIN-Rail Mounting Kit

See the following figure for an illustration of a completed DIN installation procedure.

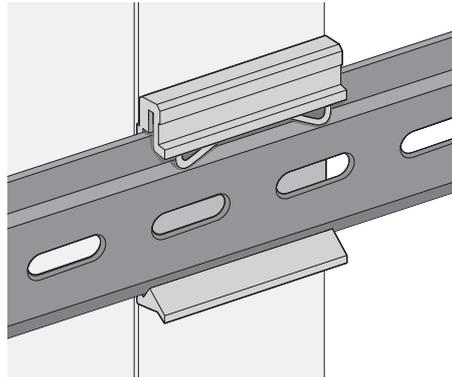


Figure 2.2 Correctly Installed DIN Rail Kit

3. Grasp the bottom of the fieldbus gateway and slightly rotate it upwards. If there is resistance, the fieldbus gateway is correctly installed. Otherwise, re-attempt the installation process from the beginning.

2.3.1.2 Removing the DIN-Rail Mounting Kit

1. Ensure that power is removed from the fieldbus gateway, and disconnect all cables and connectors from the front panel of the fieldbus gateway.
2. Push down on the top of the DIN rail clip release tab with your finger. As the clip releases, lift the bottom of the fieldbus gateway, as shown in the following illustration.

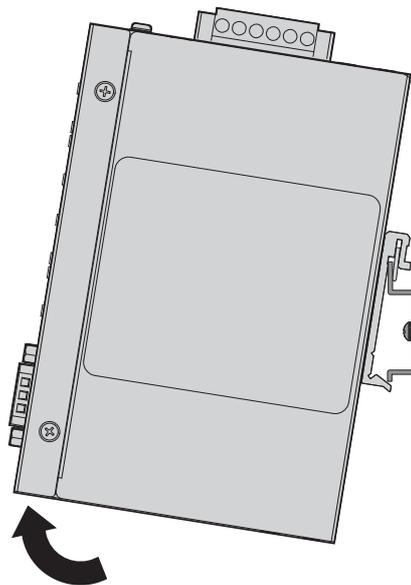


Figure 2.3 Removing the DIN-Rail

2.3.2 Wall-Mounting

The wall mounting option provides better shock and vibration resistance than the DIN rail vertical mount.

Note! *When installing, make sure to allow for enough space to properly install the cabling.*



Before the device can be mounted on a wall, you will need to remove the DIN rail plate.

1. Rotate the device to the rear side and locate the DIN mounting plate.
2. Remove the screws securing the DIN mounting plate to the rear panel of the fieldbus gateway.
3. Remove the DIN mounting plate. Store the DIN mounting plate and provided screws for later use.
4. Align the wall mounting plates on the rear side. The screw holes on the device and the mounting plates must be aligned, see the following illustration.
5. Secure the wall mount plates with M3 screws, see the following figure.

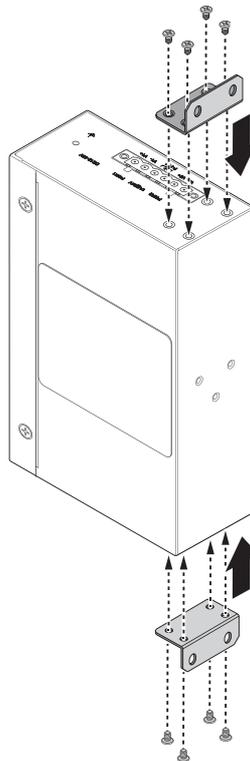


Figure 2.4 Installing Wall Mount Plates

Once the wall mounting plates are secure on the device, you will need to attach the wall screws (x4).

6. Locate the installation site and place the fieldbus gateway against the wall, making sure it is the final installation location.
7. Use the wall mount plates as a guide to mark the locations of the screw holes.
8. Drill four holes over the four marked locations on the wall, keeping in mind that the holes must accommodate wall sinks in addition to the screws.

To mount the wall plate, use screws of the size shown in the following illustration.

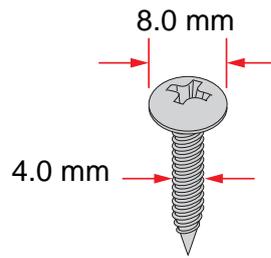


Figure 2.5 Wall Mounting Screw Dimensions

Note! *Make sure the screws dimensions are suitable for use with the wall mounting plate.*



9. Align the wall mount plate over the screws on the wall.
10. Install the wall mount plate on the screws and slide it forward to lock in place, see the following figure.

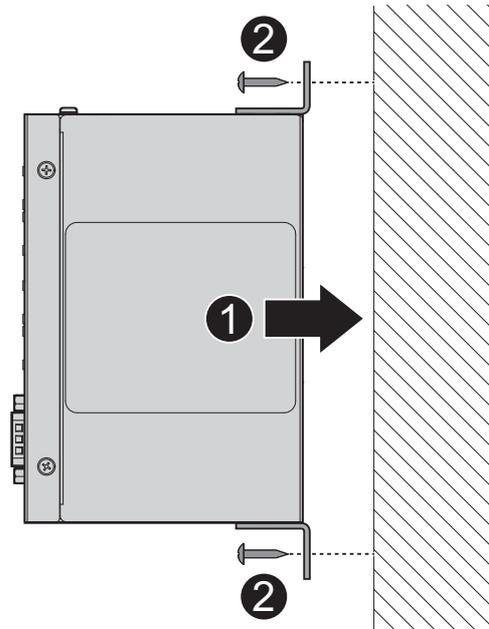


Figure 2.6 Wall Mount Installation

11. Once the device is installed on the wall, tighten the screws to secure the device. Once the installation is complete, the power terminal block can be installed. See “Wiring the Power Inputs” on page 18 for further details.

2.4 Connecting the Fieldbus Gateway to Ethernet Ports

2.4.1 RJ45 Ethernet Cable Wiring

For RJ45 connectors, data-quality, twisted pair cabling (rated CAT5 or better) is recommended. The connector bodies on the RJ45 Ethernet ports are metallic and connected to the GND terminal. For best performance, use shielded cabling. Shielded cabling may be used to provide further protection.

Straight-thru Cable Wiring		Cross-over Cable Wiring	
Pin 1	Pin 1	Pin 1	Pin 3
Pin 2	Pin 2	Pin 2	Pin 6
Pin 3	Pin 3	Pin 3	Pin 1
Pin 6	Pin 6	Pin 6	Pin 2

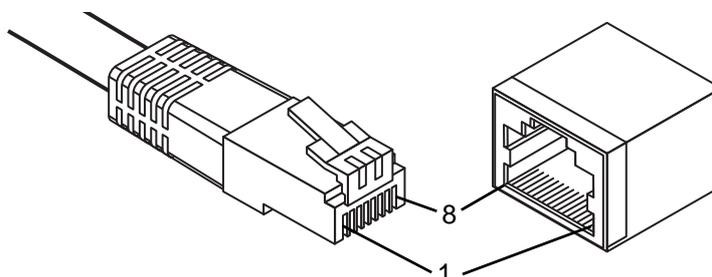


Figure 2.7 Ethernet Plug & Connector Pin Position

Maximum cable length: 100 meters (328 ft.) for 10/100BaseT.

2.5 Serial Connection

EKI-1242NR Series provides eight ports DB9 (male) connectors. RS-232/422/485 pin assignments as below:

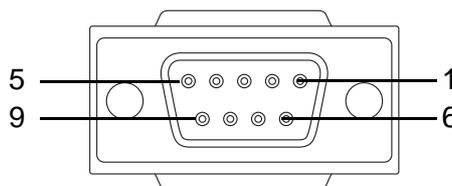


Figure 2.8 DB 9 Pin Position

Pin	1	2	3	4	5	6	7	8	9
RS-232	DCD	RX	TX	DTR	GND	DSR	RTS	CTS	RI
RS-422	TX-			TX+	GND		RX+		RX-
RS-485	DATA-			DATA+	GND				

2.6 MicroSD Card Installation

The EKI-1242NR Series provides an easy way to backup, restore, and deploy configuration settings. The fieldbus gateway provides a microSD card slot to support simple means to manage system configuration settings.

Only microSD cards with the FAT32 or exFAT file systems are supported.

2.6.1 Installing a MicroSD Card

1. Before continuing, make sure the file system on the microSD card is set to FAT32 or exFAT. If necessary, format the microSD card and then continue with the procedure.
2. Remove the screw securing the component cover.

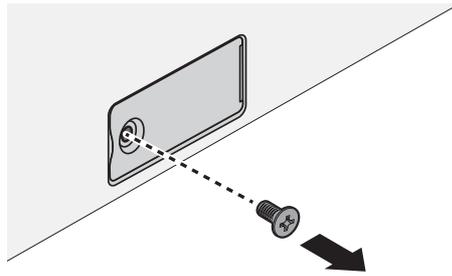


Figure 2.9 Removing the Component Cover Screw

3. Open the component cover.

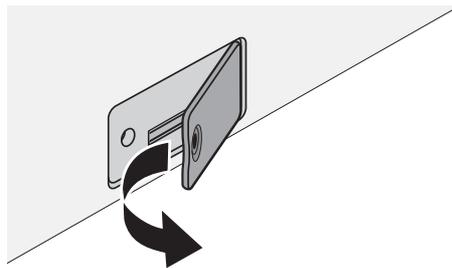


Figure 2.10 Opening the Component Cover

4. The microSD card has a beveled edge. Align the microSD card with the slot making sure the card is aligned with the groove. If there is any resistance, remove the card and re-align it to the slot.
5. Insert the microSD card and press it in until an audible click sounds.

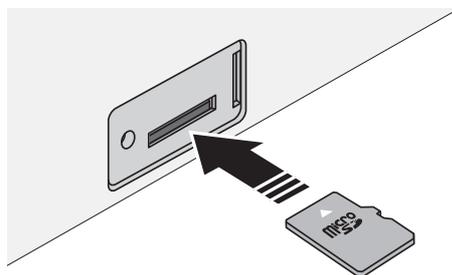


Figure 2.11 Installing the MicroSD Card

6. Close the component cover.

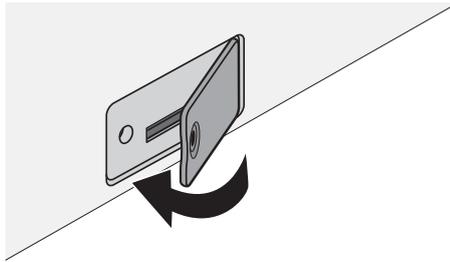


Figure 2.12 Closing the Component Cover

7. Secure the component cover with the provided screw.

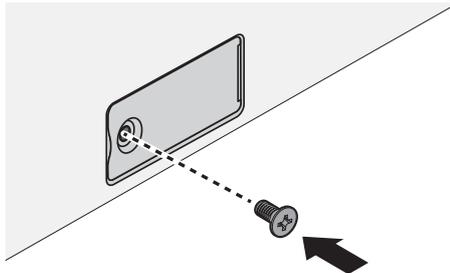


Figure 2.13 Installing the Component Cover Screw

2.6.2 Utilizing a microSD Card

1. The device includes a microSD port to provide easy functionality to backup and deployment operations. The following information describes the supported uses when a microSD card (FAT32 or exFAT) is installed in the device. Further information see “Backup Manager” on page 29 and “Upgrade Manager” on page 30.
2. The following functions are available:
 - Deployment management:
 - Reset configuration to factory default and power off.
 - Insert a microSD card with a valid configuration file.
 - Power on the device.
 - The device uses valid configuration settings in the microSD card.
 - Backup management:
 - Device setting is not factory default.
 - Enable Automatically Backup, see “Backup Manager” on page 29.
 - Power off the device and insert a microSD card.
 - Power on the device. The device’s current configuration settings are saved to the microSD card.

2.6.2.1 MicroSD Support

In the event of possible function errors, see the following information:

1. Check that the microSD card file system is FAT32 or exFAT.
2. Check that the microSD card has at least 20 Mbytes of free space.
3. Check that the microSD card is not write-protected.
4. Check that the file system is not corrupted.
5. Check that the microSD card is not damage.

If any of the events occur, the fieldbus gateway halts operation and the status LED begins flashing.

2.7 Power Supply Installation

2.7.1 Overview

Warning! Power down and disconnect the power cord before servicing or wiring the fieldbus gateway.



Caution! Do not disconnect modules or cabling unless the power is first switched off.



The device only supports the voltage outlined in the type plate. Do not use any other power components except those specifically designated for the fieldbus gateway device.

Caution! Disconnect the power cord before installation or cable wiring.



The fieldbus gateways can be powered by using the same DC source used to power other devices. A DC voltage range of 12 to 48 V_{DC} must be applied between the V1 terminal and the N1 terminal (PW1), see the following illustrations. The chassis ground screw terminal should be tied to the panel or chassis ground. A redundant power configuration is supported by a secondary power supply unit to reduce network downtime as a result of power loss.

EKI-1242NR Series support 12 to 48 V_{DC}. Dual power inputs are supported and allow you to connect a backup power source.

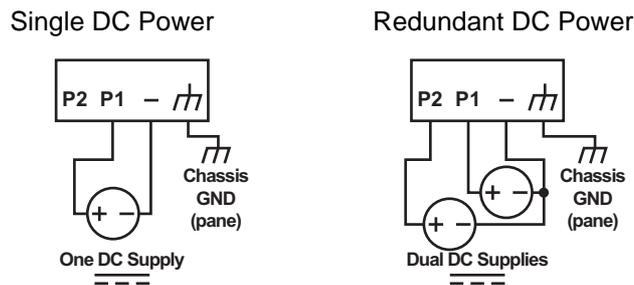


Figure 2.14 Power Wiring for EKI-1242NR Series

2.7.2 Considerations

Take into consideration the following guidelines before wiring the device:

- The Terminal Block (CN1) is suitable for 12-24 AWG (3.31 - 0.205 mm²). Torque value 7 lb-in.
- The cross-sectional area of the earthing conductors shall be at least 3.31 mm².
- Calculate the maximum possible current for each power and common wire. Make sure the power draw is within limits of local electrical code regulations.
- For best practices, route wiring for power and devices on separate paths.
- Do not bundle together wiring with similar electrical characteristics.
- Make sure to separate input and output wiring.
- Label all wiring and cabling to the various devices for more effective management and servicing.

Note! *Routing communications and power wiring through the same conduit may cause signal interference. To avoid interference and signal degradation, route power and communications wires through separate conduits.*



2.7.3 Grounding the Device

Caution! *Do not disconnect modules or cabling unless the power is first switched off.*



The device only supports the voltage outlined in the type plate. Do not use any other power components except those specifically designated for the fieldbus gateway device.

Caution! *Before connecting the device properly ground the device. Lack of a proper grounding setup may result in a safety risk and could be hazardous.*



Caution! *Do not service equipment or cables during periods of lightning activity.*



Caution! *Do not service any components unless qualified and authorized to do so.*



Caution! *Do not block air ventilation holes.*



Electromagnetic Interference (EMI) affects the transmission performance of a device. By properly grounding the device to earth ground through a drain wire, you can setup the best possible noise immunity and emissions.

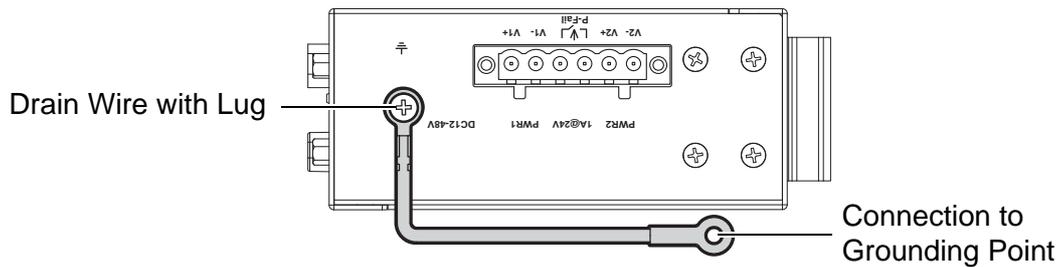


Figure 2.15 Grounding Connection

By connecting the ground terminal by drain wire to earth ground the fieldbus gateway and chassis can be ground.

Note! Before applying power to the grounded fieldbus gateway, it is advisable to use a volt meter to ensure there is no voltage difference between the power supply's negative output terminal and the grounding point on the fieldbus gateway.



2.7.4 Wiring a Relay Contact

The following section details the wiring of the relay output. The terminal block on the EKI-1242NR Series is wired and then installed onto the terminal receptor located on the EKI-1242NR Series.

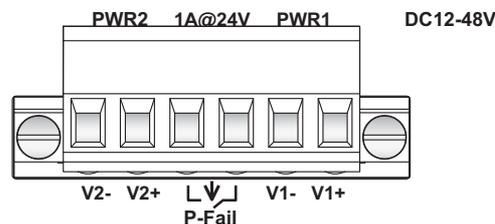


Figure 2.16 Terminal Receptor: Relay Contact

The terminal receptor includes a total of six pins: two for PWR1, two for PWR2 and two for a fault circuit.

2.7.5 Wiring the Power Inputs

Caution! Do not disconnect modules or cabling unless the power is first switched off.



The device only supports the voltage outlined in the type plate. Do not use any other power components except those specifically designated for the fieldbus gateway device.

Warning! Power down and disconnect the power cord before servicing or wiring the fieldbus gateway.



There are two power inputs for normal and redundant power configurations. The power input 2 is used for wiring a redundant power configuration. See the following for terminal block connector views.

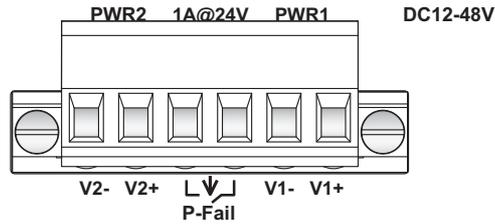


Figure 2.17 Terminal Receptor: Power Input Contacts

To wire the power inputs:

Make sure the power is not connected to the fieldbus gateway or the power converter before proceeding.

1. Loosen the screws securing terminal block to the terminal block receptor.
2. Remove the terminal block from the fieldbus gateway.

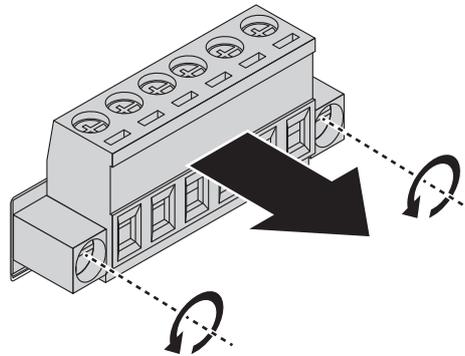


Figure 2.18 Removing a Terminal Block

3. Insert a small flat-bladed screwdriver in the N1/L1 wire-clamp screws, and loosen the screws.
4. Insert the negative/positive DC wires into the N1/L1 terminals of PW1. If setting up power redundancy, connect PW2 in the same manner.
5. Tighten the wire-clamp screws to secure the DC wires in place.

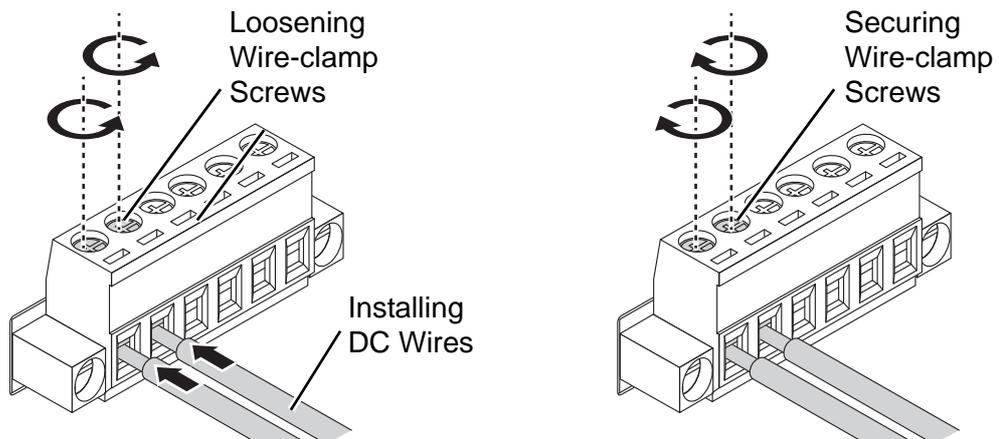


Figure 2.19 Installing DC Wires in a Terminal Block

6. Align the terminal block over the terminal block receptor on the fieldbus gateway.
 7. Insert the terminal block and press it in until it is flush with the terminal block receptor.
 8. Tighten the screws on the terminal block to secure it to the terminal block receptor.
- If there is no gap between the terminal block and the terminal receptor, the terminal block is seated correctly.

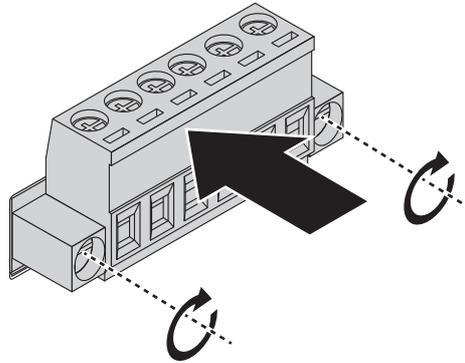


Figure 2.20 Securing a Terminal Block to a Receptor

2.8 Default Button

Reset configuration to factory default:

Press and hold the Default button for 10 seconds.

System reboot:

Press and hold the Default button for 2 seconds.

Note! Do NOT power off the fieldbus gateway when loading default settings.



Chapter 3

Managing Fieldbus Gateway

3.1 Log In

To access the login window, connect the device to the network, see “Connecting the Fieldbus Gateway to Ethernet Ports” on page 13. Once the fieldbus gateway is installed and connected, power on the fieldbus gateway and see the following procedures to log in the fieldbus gateway.

When the fieldbus gateway is first installed, the default network configuration is set to DHCP enabled. You will need to make sure your network environment supports the fieldbus gateway setup before connecting it to the network.

1. Launch your web browser on a computer.
2. In the browser’s address bar type in the fieldbus gateway’s default IP address (192.168.1.1). The login screen displays.
3. Enter the default user name and password (admin/admin) to log into the management interface. You can change the default password after you have successfully logged in.
4. Click Login to enter the management interface.

The image shows a web-based login interface. It features two text input fields: the top one is labeled "Username" and the bottom one is labeled "Password". Below these fields is a blue button with the text "Login". The entire form is set against a light yellow background.

Figure 3.1 Login Screen

3.1.1 Changing Default Password

In keeping with good management and security practices, it is recommended that you change the default password as soon as the device is functioning and setup correctly. The following details indicate the necessary steps to change the default password.

To change the password:

1. Navigate to **System Management > Change Password**.
2. In the **Password** field, type in the new password. Re-type the same password in the **Confirmation** field.
3. Click **Submit** to change the current settings.

The image shows a web-based "Change Password" form. The title bar of the window reads "Change Password". There are two text input fields: the top one is labeled "Password" and the bottom one is labeled "Confirmation". Below these fields is a blue button with the text "Submit". The form has a light yellow background.

Figure 3.2 Changing a Default Password

After saving all the desired settings, perform a system save (**System Management > Apply Configuration**). The changes are saved following a system reboot.

3.2 Overview

3.2.1 Device Information

The Device Information menu lists information, such as: Model, Firmware version, MAC Address, and more, pertaining to the system. The information is for review only. To modify the device information, see the respective item within the user interface.

The following figures represent multiple supported devices. Some interface screens may represent specific device models.

To access this page, click **Overview > Device Information**.

The screenshot displays three sections of device information. Each section has a title bar with a grid icon and an expand/collapse arrow. The 'System' section lists Model (EKI-1242NR), Firmware Version (1.00.04), and Uptime (1h 5m 26s). The 'Ethernet Group 1' section lists MAC Address (74:FE:48:34:87:1E), Mode (Static), IP Address (192.168.1.165), Subnet Mask (255.255.255.0), and Gateway (192.168.1.254). The 'Ethernet Group 2' section lists MAC Address (74:FE:48:34:87:1D), Mode (Static), IP Address (192.168.1.165), Subnet Mask (255.255.255.0), and Gateway (192.168.1.254).

System	
Information Name	Information Value
Model	EKI-1242NR
Firmware Version	1.00.04
Uptime	1h 5m 26s

Ethernet Group 1	
Information Name	Information Value
MAC Address	74:FE:48:34:87:1E
Mode	Static
IP Address	192.168.1.165
Subnet Mask	255.255.255.0
Gateway	192.168.1.254

Ethernet Group 2	
Information Name	Information Value
MAC Address	74:FE:48:34:87:1D
Mode	Static
IP Address	192.168.1.165
Subnet Mask	255.255.255.0
Gateway	192.168.1.254

Figure 3.3 Overview > Device Information

The following table describes the items in the previous figure.

Item	Description
System	
Model	Displays the model name of the device.
Firmware Version	Displays the current firmware version of the device.
Uptime	Displays the accumulated time for continuous operation.
Ethernet Group 1	
MAC Address	Displays the MAC address of the device.
Mode	Displays the IP address setting mode of the device.
IP Address	Displays the assigned IP address of the device.
Subnet Mask	Displays the assigned subnet mask of the device.
Gateway	Displays the assigned gateway of the device.

Item	Description
Ethernet Group 2	
MAC Address	Displays the MAC address of the device.
Mode	Displays the IP address setting mode of the device.
IP Address	Displays the assigned IP address of the device.
Subnet Mask	Displays the assigned subnet mask of the device.
Gateway	Displays the assigned gateway of the device.

3.3 Network Setting

3.3.1 IP Setting

The IP Setting menu allows you to select a static address or DHCP network configuration. The static address displays the configurable settings for the static option.

To access this page, click **Network Setting > IP Setting**.

The screenshot shows the 'IP Setting' configuration page. It is divided into two sections: 'Ethernet Group 1 IP Address Setting' and 'Ethernet Group 2 IP Address Setting'. Each section contains the following fields:

- Interface Name:** eth1 (for Group 1) and br-lan2 (for Group 2).
- Mode:** A dropdown menu set to 'Static address'.
- IP Address:** 192.168.1.165
- Subnet Mask:** 255.255.255.0
- Gateway:** 192.168.1.254

Below the Group 2 settings, there is a checkbox labeled 'Ethernet Group 1 and Ethernet Group 2 interface use the same IP address setting', which is checked. A 'Submit' button is located at the bottom of the form.

Figure 3.4 Network Setting > IP Setting

The following table describes the items in the previous figure.

Item	Description
Ethernet Group 1 IP Address Setting	
Mode	Click the drop-down menu to select the IP address setting mode: Static address or DHCP client.
IP Address	Enter a value to specify the IP address of the interface. The default is 192.168.1.1.

Item	Description
Subnet Mask	Enter a value to specify the IP subnet mask for the interface. The default is 255.255.255.0.
Gateway	Enter a value to specify the default gateway for the interface. The default is 192.168.1.254.
Ethernet Group 2 IP Address Setting	
Mode	Click the drop-down menu to select the IP Address Setting mode: Static address or DHCP client.
IP Address	Enter a value to specify the IP address of the interface. The default is 192.168.1.1.
Subnet Mask	Enter a value to specify the IP subnet mask for the interface. The default is 255.255.255.0.
Gateway	Enter a value to specify the default gateway for the interface. The default is 192.168.1.254.
Ethernet Group 1 and Ethernet Group 2 interface use the same IP address setting	<p>Check the option to use same IP address setting on Ethernet Group 1 and Ethernet Group 2 interfaces. In this mode, the Ethernet ports of Ethernet Group 1 and Ethernet Group 2 are bridged, so the traffic can be forwarded between these interfaces.</p> <p>Unchecked the option to use two different IP subnet on Ethernet Group 1 and Ethernet Group 2 interfaces. In this mode, the Ethernet Group of Ethernet Group 1 and Ethernet Group 2 are not bridged, so the traffic can't be forwarded between these interfaces.</p>
Submit	Click Submit to save the values and update the screen.

3.4 Serial Settings

The Serial Setting menu allows you to configure the serial interface type and flow control for ports.

3.4.1 Port

To access this page, click **Serial Settings > Port 1/Port 2**.

Figure 3.5 Serial Settings > Port 1/Port 2

The following table describes the items in the previous figure.

Item	Description
Name	Display the name of the serial port. Use the name in the Serial Settings > Port 1/Port 2 to create a serial input or serial output in Node-RED.

Item	Description
Type	Click the drop-down menu to select a serial interface: RS232, RS422 or RS485.
Flow Control	Click the drop-down menu to select the flow control mode: None, XOn/XOff or RTS/CTS.
Submit	Click Submit to save the values and update the screen.

Note! *Other serial configurations such as “Baud Rate”, “Parity”, “Date Bits” and “Stop Bits” can be configured by built-in Node-RED serial nodes.*



Note! *Configuration changes take effect after a system reboot.*



3.5 Protocol Setting

3.5.1 Node-RED Setting

Launch the Node-RED Setting page to set Node-RED port configuration. The Node-RED service restarts automatically after restoring control flows.

To access this page, click **Protocol Setting > Node-RED Setting**.

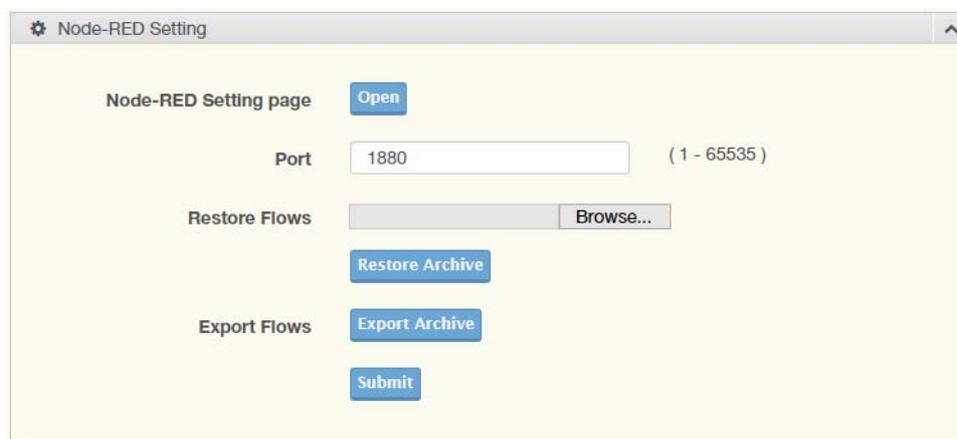


Figure 3.6 Protocol Setting > Node-RED Setting

The following table describes the items in the previous figure.

Item	Description
Node-RED Setting page	Click Open to to launch the Node-RED setting page.
Port	Enter a value to specify the port used to serve the editor UI. Default: 1880 (1 - 65535).
Restore Flows	Click Browse to select the Node-RED control flows (JSON file).
Restore Archive	Click Restore Archive to restore configuration to the device.
Export Archive	Click Export Archive to export the Node-RED control flows.
Submit	Click Submit to save the values and update the screen.

Note! Configuration changes take effect after a system reboot.



3.5.2 Node-RED Library

You can download more node modules from www.advantech.com.tw and download document and toolchain for how to make node modules by yourself from <https://nodered.org/>.

It is easy to manage node modules through the Node-RED Library page. The Node-RED service restarts automatically after importing or deleting node modules.

To access this page, click **Protocol Setting > Node-RED Library**.

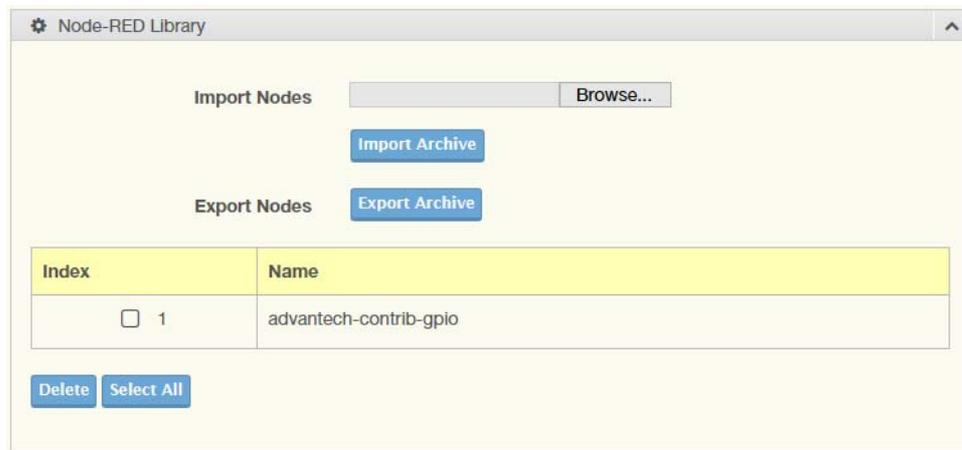


Figure 3.7 Protocol Setting > Node-RED Library

The following table describes the items in the previous figure.

Item	Description
Import Nodes	Click Browse to select the Node-RED library file.
Import Archive	Click Import Archive to import the Node-RED library file.
Export Archive	Click Export Archive to export all node modules which will be compressed into a <all_node_modules>.tgz file.
Delete	Click Delete to delete the selected Node-RED library by checking the boxes above.
Select All	Click Select All to select all Node-RED library files.

3.6 System Management

3.6.1 Change Password

The Change Password function allows you to easily update your current password from a single menu.

To access this page, click **System Management > Change Password**.



Figure 3.8 System Management > Change Password

The following table describes the items in the previous figure.

Item	Description
Password	Enter the character set to define a password.
Confirmation	Retype the password entry to confirm the profile password.
Submit	Click Submit to save the values and update the screen.

If you want to disable the password protection, change the password to the default option None (leave the password column blank). Make sure you submit and reboot the system (**System Management > Apply Configuration**) to save the updates.

3.6.2 Backup Manager

The Backup Manager page allows you to backup configuration settings from the device or restore a configuration file to the device.

To access this page, click **System Management > Backup Manager**.

The image shows two stacked configuration panels. The top panel, titled 'Backup Manager', contains the following elements: a 'Download Backup' section with a blue 'Backup' button; a 'To' section with radio buttons for 'PC' (selected) and 'SD Card'; a 'Restore Backup' section with a text input field and a 'Browse...' button; an 'Upload Archive' section with a blue 'Upload Archive' button; and a 'From' section with radio buttons for 'PC' (selected) and 'SD Card'. The bottom panel, titled 'SD Card Backup', contains an 'Automatically Backup' section with radio buttons for 'Enabled' (selected) and 'Disabled', and a blue 'Submit' button.

Figure 3.9 System Management > Backup Manager

The following table describes the items in the previous figure.

Item	Description
Backup Manager	
Download Backup	Click Backup to backup configuration from the device.
To	Click the radio button to select the backup file destination.
Restore Backup	Click Browse to select the configuration file.
Upload Archive	Click Upload Archive to restore configuration to the device.
From	Click the radio button to select upload file source.
SD Card Backup	
Automatically Backup	Click the radio button to enable or disable the SD card automatically backup function.
Submit	Click Submit to save the values and update the screen.

3.6.3 Upgrade Manager

The Upgrade Manager page allows you to upgrade the firmware.

To access this page, click **System Management > Upgrade Manager**.



Figure 3.10 System Management > Upgrade Manager

The following table describes the items in the previous figure.

Item	Description
Browse File	Click Browse to select the firmware file.
Upgrade	Click Upgrade to upgrade the firmware.

3.6.4 Reset System

To access this page, click **System Management > Reset System**.

Click **Reset** to have all configuration parameters reset to their factory default values. All changes that have been made will be lost, even if you have issued a save.

Reset settings take effect after a system reboot.



Figure 3.11 System Management > Reset System

3.6.5 Reboot Device

To access this page, click **System Management > Reboot Device**.

Click **Reboot** to reboot the fieldbus gateway. Configuration changes made last with an issued apply configuration will be lost.



Figure 3.12 System Management > Reboot Device

3.6.6 Apply Configuration

To access this page, click **System Management > Apply Configuration**.

Click **Apply and Reboot** to have the configuration changes saved following a system reboot. All changes submitted since the previous save or system reboot will be retained by the device.



Figure 3.13 System Management > Apply Configuration

Note! *Configuration changes take effect after a system reboot. Before the configuration changes are applied, the message “Go to Apply page to apply configuration and reboot device.” appears on the top of the web page.*



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