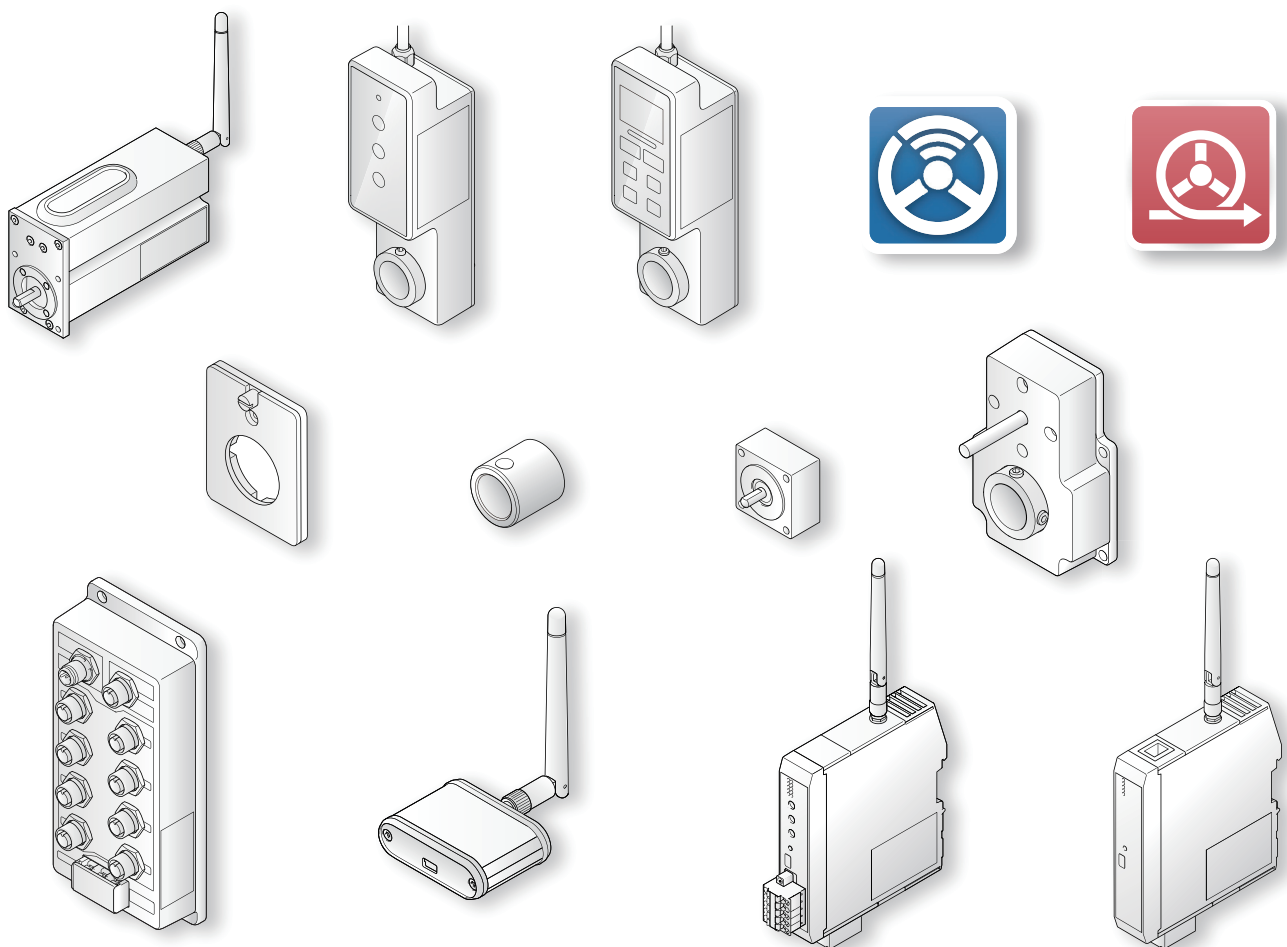


Product Configuration

Wired/Wireless Positioning Units



The EPU-100 and EPL-48-D6-D6
have been discontinued as of
June 2024.



Introduction

We wish to thank you for purchasing **Wired/Wireless Positioning Units** from NBK.

This manual describes the product configurations for wired/wireless positioning units. Before using any product, be sure to carefully read that product's instruction manual and understand how to use it properly first.

Application of Wired/Wireless Positioning Units

A wired/wireless positioning unit is designed for general industrial applications such as feed screw driving.

Do not use this product for applications in which improper use or failure could result in death or injury, or applications in which failure could result in serious public damage or similar negative effects.

- **Contact us if you are considering a special use of this product.**
- **Incorporate and install failsafe functions (emergency stop, monitoring, and similar devices) if using wired/wireless positioning units in equipment that could cause a serious accident or loss.**

About Disposal

When disposing this product, follow the rules and regulations of the corresponding local government and dispose of it as industrial waste.

© 2021- Nabeya Bi-tech Kaisha Co., Ltd.

Copying or reprinting all or part of this document in any manner without permission is strictly prohibited.

Some of the specifications described in this document are subject to change without notice due to product improvements.

Explanation of Symbols

Specific information is indicated in written form near each symbol.



Indicates supplementary written explanation and useful information.



Indicates the reference page(s) in this or related instruction manuals.

Contents

Introduction	1
1 Overview	3
1.1 Product Configuration Overview	3
1.2 Wired/Wireless Positioning Units	4
1.2.1 Wired/Wireless Positioning Units	4
1.2.2 Wired/Wireless Positioning Unit Options	5
1.3 Transceivers	8
1.4 Dedicated Software	8
2 Equipment Selection	9
2.1 Equipment Configuration	9
2.2 Connection Example	10
Revision History	20

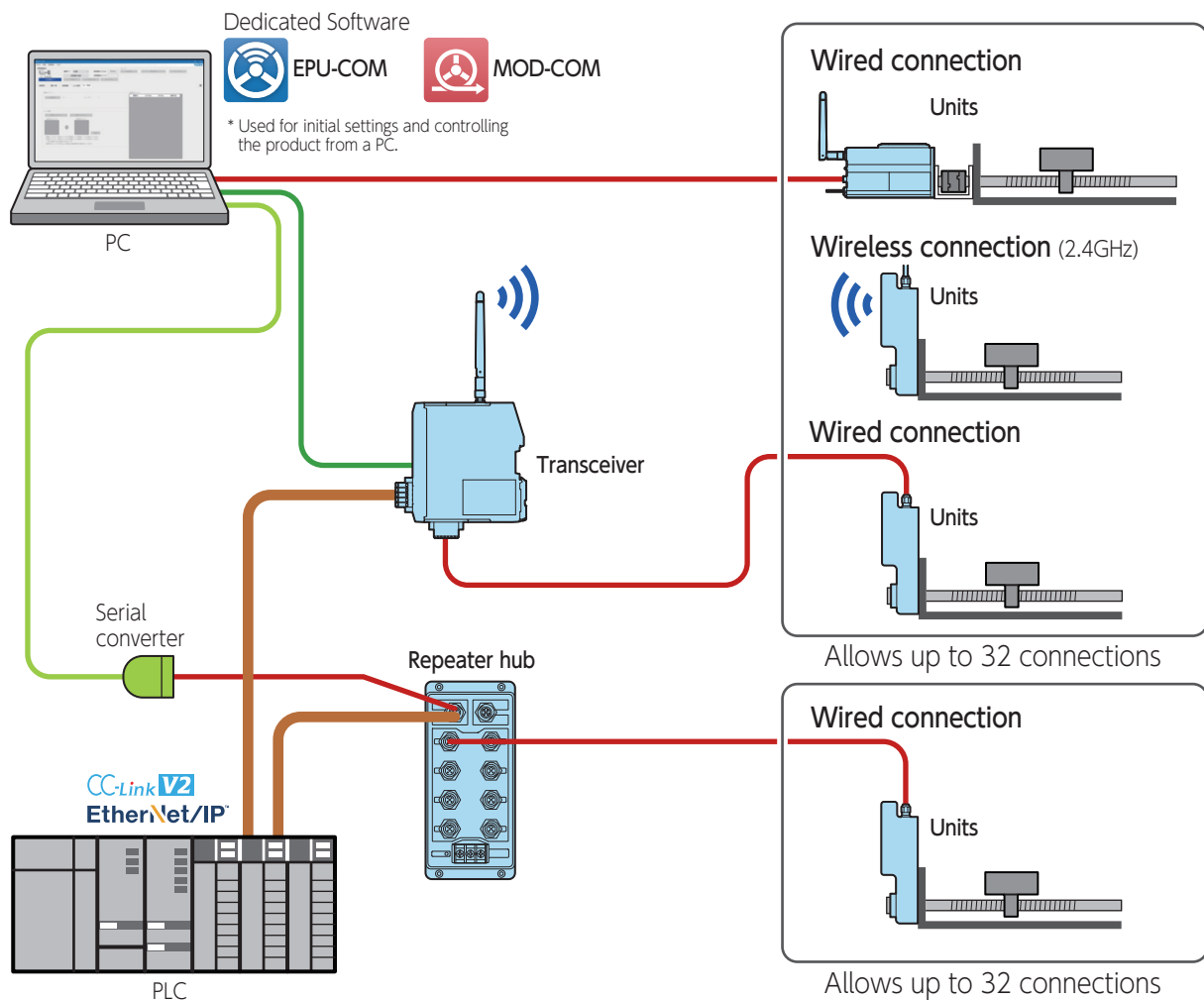
1 Overview

1.1 Product Configuration Overview

A wired/wireless positioning unit is a unit that automates the positioning of a feed screw. By replacing the manual operation handle, it automates the positioning work of various devices and equipment.

Overall Image of the Configured System

A wired/wireless positioning unit consists of a unit that drives the feed screw, a transceiver that controls the unit, other optional parts for the unit, as well as dedicated software for unit settings and operation.



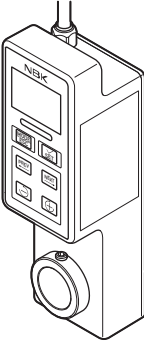
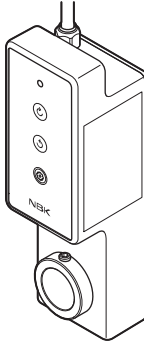
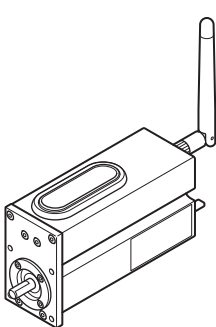
* Each unit must be connected to a 24 VDC power supply.

1.2 Wired/Wireless Positioning Units

1.2.1 Wired/Wireless Positioning Units

This unit automates the positioning mechanism of the feed screw.

By replacing the feed screw operation handle with the unit, it automates the positioning mechanism of various devices and equipment.

Series	EPU-210	EPU-220	EPU-100
			
Wireless Connection Method	—	2.4 GHz wireless	2.4 GHz wireless
Wired Connection Method	RS-485(Modbus RTU)	RS-485	RS-232C
Connection Destination	PC/PLC * This unit can also be used independently.	Transceiver	PC (wired) / Transceiver (wireless)
Equipped with display?	Yes	No	No
Cable Terminal Specifications	EPU-210-A: Loose wires EPU-210-B: Connector	EPU-220-A: Loose wires EPU-220-B: Connector	Loose wires

The EPU-100 and EPL-48-D6-D6 have been discontinued as of June 2024.

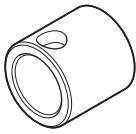
1.2.2 Wired/Wireless Positioning Unit Options

Confirm which options are supported by which series using the table below.

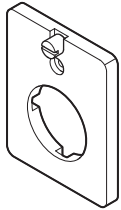
Option Product Name	Product No.	EPU-210	EPU-220	EPU-100
Collars	EOCL-200	Supported	Supported	Not supported
Mounting Plates	EOAP-200	Supported	Supported	Not supported
Repeater Hubs	EORP-200			
Cables for Repeater Hubs	EOCA-200-A EOCA-200-B EOCA-200-C	Supported*	Supported*	Not supported
High Torque Adapters	EOAT-200			
Collars for High Torque Adapters Mounting Plates for High Torque Adapters	EOTCL-200 EOTAP-200	Supported	Supported	Not supported
Lock Adapters	EPL-48-D6-D6	Not supported	Not supported	Supported

* Can be used only with the EPU-210-B and EPU-220-B (types with connector for the cable end specifications).

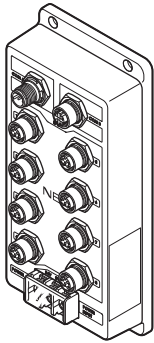
The EPU-100 and EPL-48-D6-D6 have been discontinued as of June 2024.

**Collars (EOCL-200)**

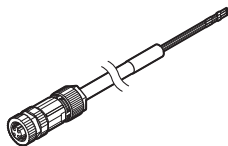
The wired/wireless positioning unit shaft hole diameter can be changed to match the rotating shaft.

**Mounting Plates (EOAP-200)**

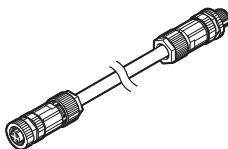
If replacing the digital position indicator and handle attached to a machine with a wired/wireless positioning unit, you can use the positioning pin hole for the digital position indicator of the machine as-is to mount the wired/wireless positioning unit.

**Repeater Hubs (EORP-200)**

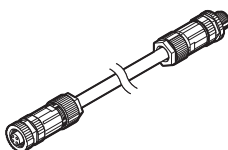
If connecting the host (PC/PLC) or the transceiver to the units with a wired connection, using repeater hubs allows for easy wired connections.

**Cables for Repeater Hubs (EOCA-200-A)**

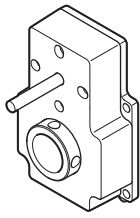
Cables which connect repeater hubs to the host (PC/PLC) or the transceivers. It is possible to connect to a USB port on your PC via a serial converter.

**Cables for Repeater Hubs (EOCA-200-B)**

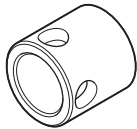
Cables which connect two different repeater hubs.

**Cables for Repeater Hubs (EOCA-200-C)**

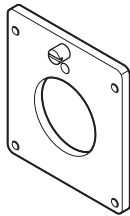
Extension cables which connect the repeater hubs and the wired/wireless positioning units.

**High Torque Adapters (EOAT-200)**

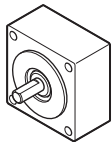
Allows you to decelerate the rotating speed and amplify the torque of the wired/wireless positioning units.

**Collars for High Torque Adapters (EOTCL-200)**

The high torque adapter shaft hole diameter can be changed to match the rotating shaft.

**Mounting Plates for High Torque Adapters (EOTAP-200)**

If replacing the digital position indicator and handle attached to a machine with a wired/wireless positioning unit and high torque adapter, you can use the positioning pin hole for the digital position indicator of the machine as-is to mount the high torque adapter.

**Lock Adapters (EPL-48-D6-D6)**

Position retention (locking) component used in combination with a wireless positioning unit.

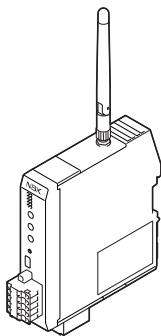
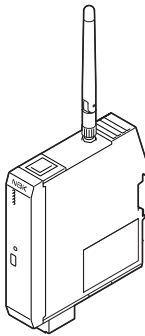
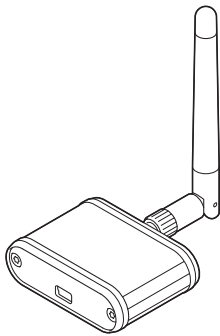
The torque from the input side (unit side) is transmitted to the output side (device side), but the torque load from the output side is not transmitted to the input side.

The EPU-100 and EPL-48-D6-D6 have been discontinued as of June 2024.

1 Overview



1.3 Transceivers

A dedicated transceiver for use with a wireless positioning unit. It is able to automatically and collectively control up to 32 units.

Series	EPC-200-CC	EPC-210-EIP	EPC-100
			
Unit	EPU-100 (wireless) / EPU-220 series		EPU-100 / EPU-220 series
Unit Connection Method	Wired: RS-485 Wireless: 2.4 GHz wireless	Wired: RS-485 Wireless: 2.4 GHz wireless	Wireless: 2.4 GHz wireless
Host Connection Method	PC: USB 2.0 PLC: CC-Link Ver. 2.00	PC: USB 2.0 PLC: EtherNet/IP™	PC: USB 2.0

1.4 Dedicated Software

Dedicated software for easy settings and operation using commercially available PCs. These can be downloaded from the website below, free of charge. Select the software that supports your units.

Dedicated Software	EPU-COM	MOD-COM
	 EPU-COM	 MOD-COM
Unit	EPU-100/220 series	EPU-210 series
Transceiver	EPC-100/200/210	—
Download URL	https://www.nbk1560.com/en-US/contact/positioning_unit/	https://www.nbk1560.com/en-US/products/mechatronics/positioning_unit/download/mod-com/

The EPU-100 and EPL-48-D6-D6 have been discontinued as of June 2024.

2 Equipment Selection

2.1 Equipment Configuration

Wired/wireless positioning units are controlled using transceivers, dedicated software, and a PC or PLC. However, for normal operation and control, it is necessary to operate the equipment using the configuration that is optimal for the situation.

Connection Variations

The following lists the configurations and connection variations for controlling wired/wireless positioning units.

Select the configuration that is optimal for your specifications and perform the correct connections. For more details regarding connections, please refer to the instruction manual for each product.

Host	Unit Connection Method	Host Connection Method	Transceiver	Unit	Software	Connection Example	Reference Page
PC	Wireless	USB 2.0	EPC-100	EPU-100 EPU-220	EPU-COM	①	P.10
		USB 2.0	EPC-200-CC EPC-210-EIP	EPU-100 EPU-220	EPU-COM	②	P.11
	Wired	USB 2.0	EPC-200-CC EPC-210-EIP	EPU-220	EPU-COM	③	P.12
		RS-232C	—	EPU-100	EPU-COM	④	P.13
		RS-485 (Modbus RTU)	—	EPU-210	MOD-COM	⑤	P.14
PLC	Wireless	CC-Link Ver. 2.00	EPC-200-CC	EPU-100 EPU-220	EPU-COM	⑥	P.15
		EtherNet/IP™	EPC-210-EIP				
	Wired	CC-Link Ver. 2.00	EPC-200-CC	EPU-220	EPU-COM	⑦	P.16
		EtherNet/IP™	EPC-210-EIP				
		RS-485 (Modbus RTU)	—	EPU-210	—	⑧	P.17
None	—	—	—	EPU-210	—	⑨	P.18

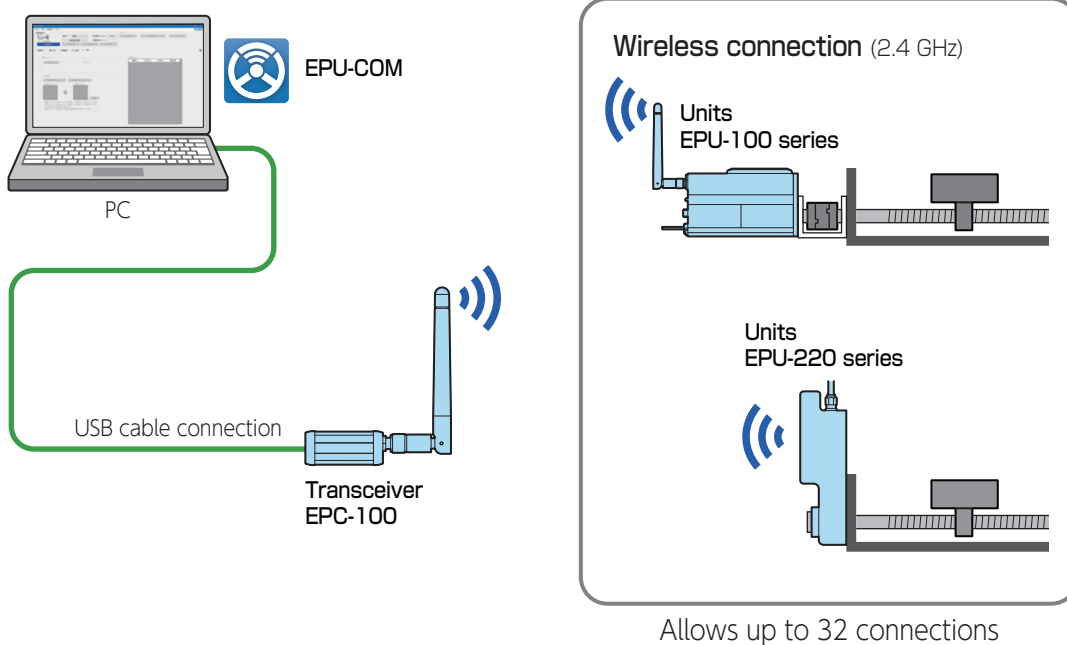
The EPU-100 and EPL-48-D6-D6 have been discontinued as of June 2024.

2 Equipment Selection

2.2 Connection Example

Connection Example ①

Host	Unit Connection Method	Host Connection Method	Transceiver	Unit	Software
PC	Wireless	USB 2.0	EPC-100	EPU-100 EPU-220	EPU-COM



Point

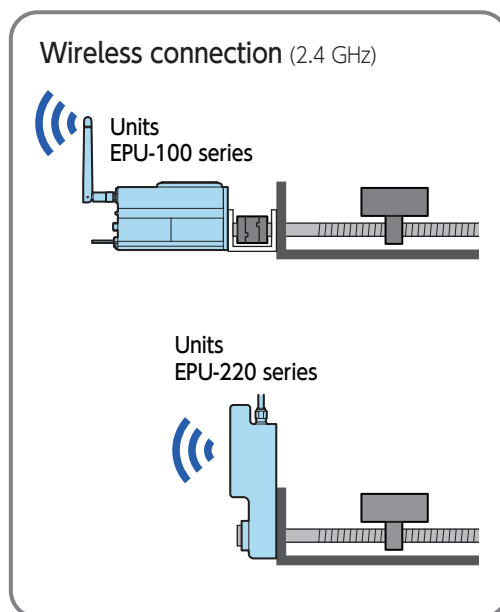
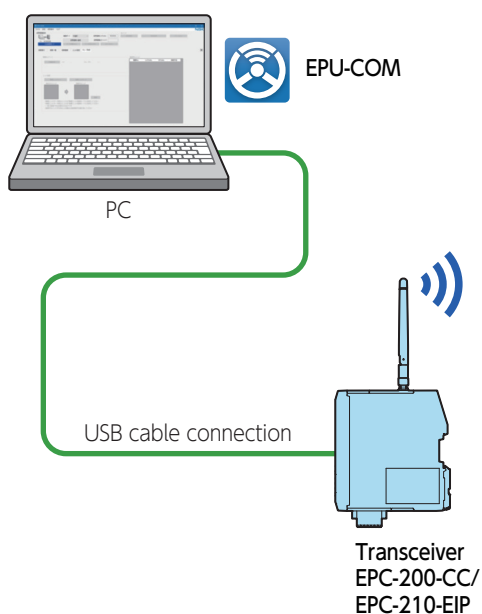
- This can also be used in combination with the wired communication of the EPU-100 series in Connection Example ④. In that case, the maximum number of units that can be connected is 32, regardless of whether wired or wireless.
- Connect each unit to a 24 VDC power supply.

The EPU-100 and EPL-48-D6-D6 have been discontinued as of June 2024.

2 Equipment Selection

Connection Example ②

Host	Unit Connection Method	Host Connection Method	Transceiver	Unit	Software
PC	Wireless	USB 2.0	EPC-200-CC EPC-210-EIP	EPU-100 EPU-220	EPU-COM



Allows up to 32 connections



Point

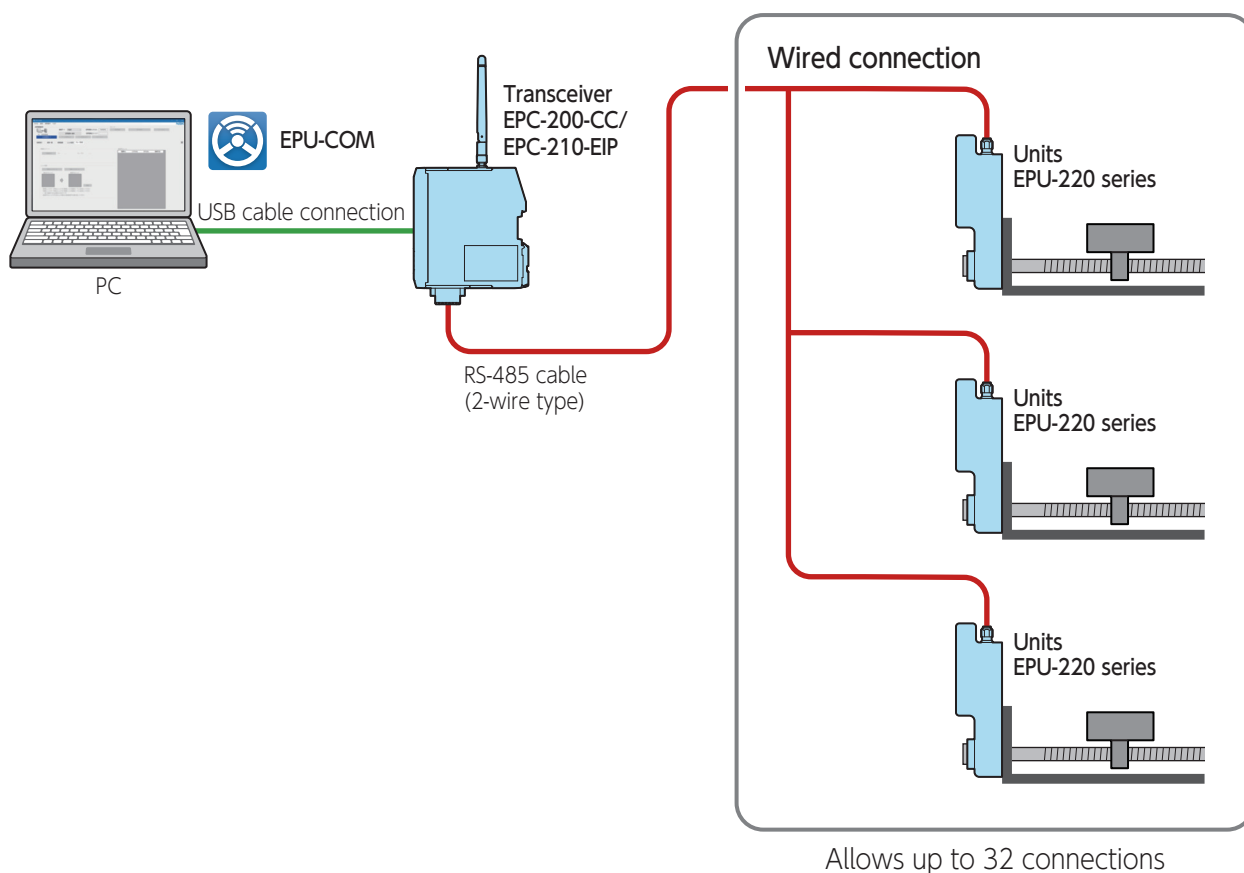
- This can also be used in combination with the wired communication of the EPU-220 series in Connection Example ③. In that case, the maximum number of units that can be connected is 32, regardless of whether wired or wireless.
- Connect each unit to a 24 VDC power supply.

The EPU-100 and EPL-48-D6-D6 have been discontinued as of June 2024.

2 Equipment Selection

Connection Example ③

Host	Unit Connection Method	Host Connection Method	Transceiver	Unit	Software
PC	Wired	USB 2.0	EPC-200-CC EPC-210-EIP	EPU-220	EPU-COM



Point

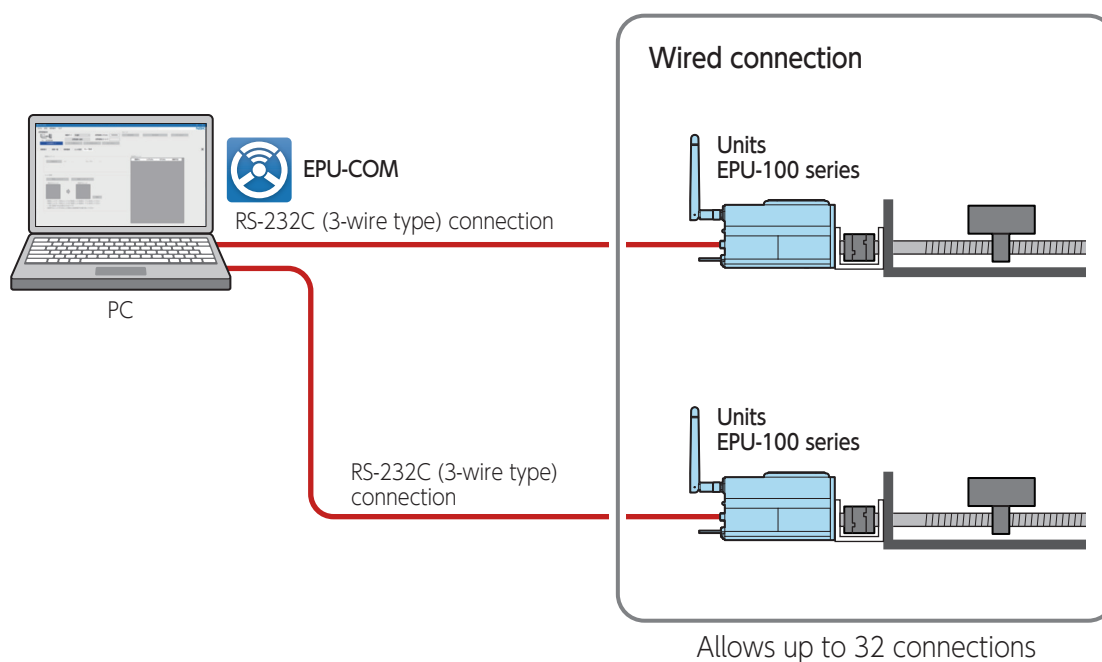
- If using wired communication for the EPU-220 series, each unit is connected together from the EPC-200-CC/EPC-210-EIP in a series (daisy chain connection).
- The EPU-100 series and EPU-220 series in Connection Example ② can also use wireless communication. In that case, the maximum number of units that can be connected is 32, regardless of whether wired or wireless.
- Connect each unit to a 24 VDC power supply.
- Using the EORP-200 repeater hubs allows for easy wired connections for wireless positioning units. For more information, please refer to the [Repeater Hubs EORP-200 Instruction Manual](#). If using repeater hubs, please use units with connector for the cable end specifications.

The EPU-100 and EPL-48-D6-D6 have been discontinued as of June 2024.

2 Equipment Selection

Connection Example ④

Host	Unit Connection Method	Host Connection Method	Transceiver	Unit	Software
PC	Wired	RS-232C	—	EPU-100	EPU-COM



Point

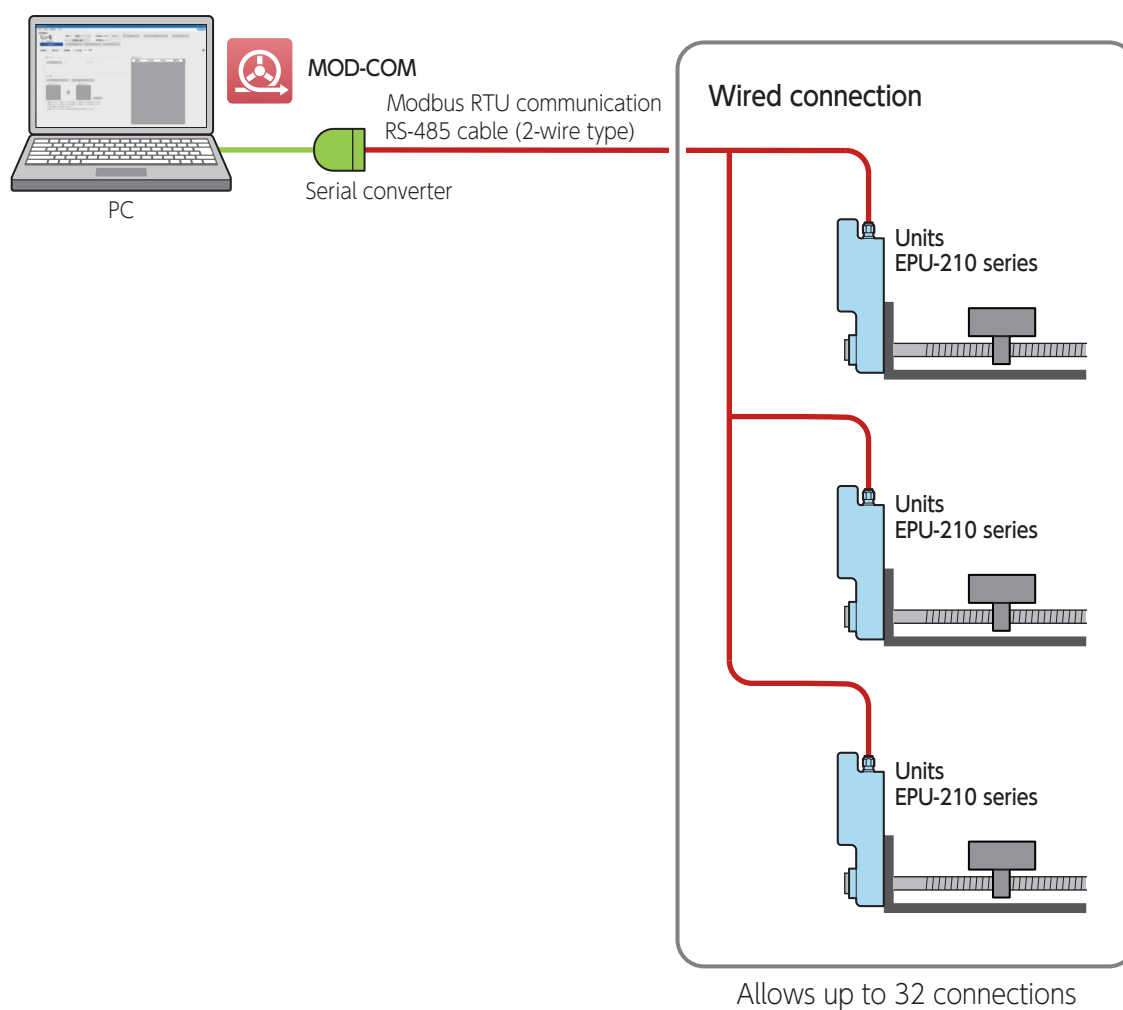
- If using wired communication for the EPU-100 series, you will need an RS-232C communication port for each unit to be connected.
- This can also be used in combination with the wireless communication of the EPU-100 series in Connection Example ①. In that case, the maximum number of units that can be connected is 32, regardless of whether wired or wireless.
- Connect each unit to a 24 VDC power supply.

The EPU-100 and EPL-48-D6-D6 have been discontinued as of June 2024.

2 Equipment Selection

Connection Example ⑤

Host	Unit Connection Method	Host Connection Method	Transceiver	Unit	Software
PC	Wired	RS-485 (Modbus RTU)	—	EPU-210	MOD-COM



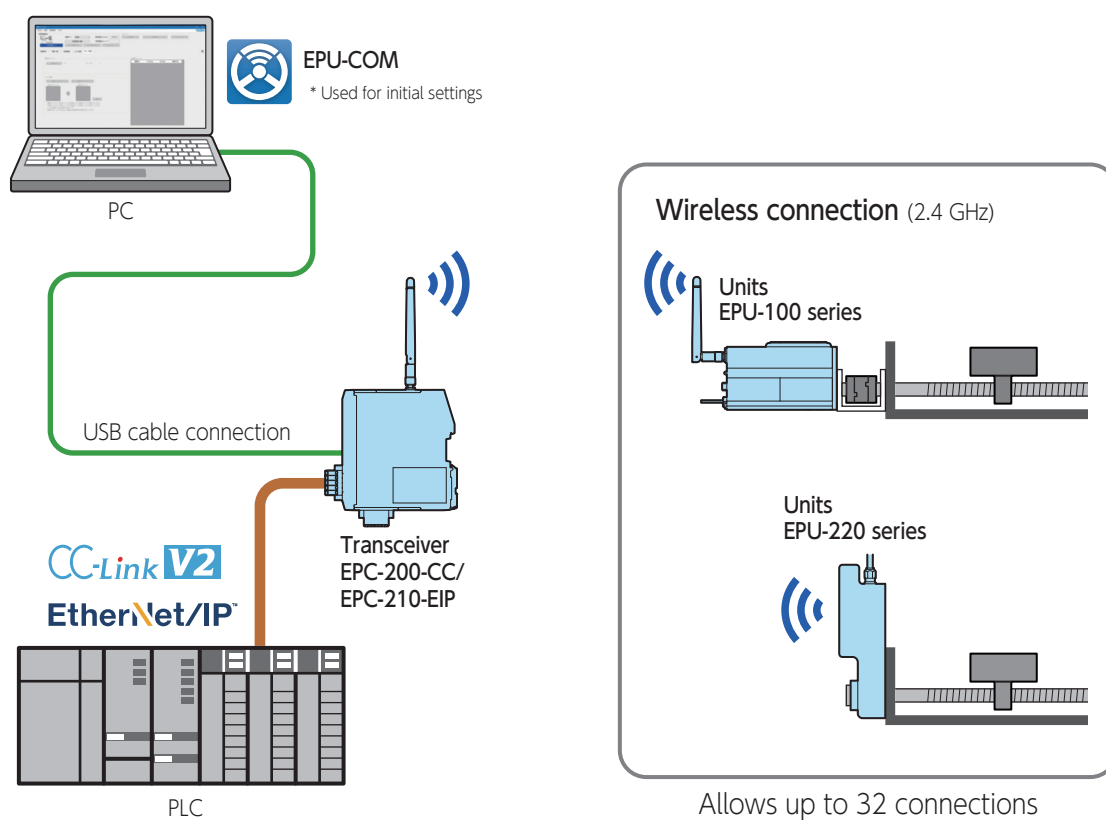
Point

- If using wired communication for the EPU-210 series, each unit is connected together from the PC in a series (daisy chain connection).
- If connecting to a PC, it is necessary to use a serial converter to convert the serial communication of the RS-485 to make the connection.
- Using the EORP-200 repeater hubs allows for easy wired connections for wired positioning units. For more information, please refer to the [Repeater Hubs EORP-200 Instruction Manual](#). If using repeater hubs, please use units with connector for the cable end specifications.
- Connect each unit to a 24 VDC power supply.

2 Equipment Selection

Connection Example ⑥

Host	Unit Connection Method	Host Connection Method	Transceiver	Unit	Software
PLC	Wireless	CC-Link Ver. 2.00	EPC-200-CC	EPU-100	EPU-COM
		EtherNet/IP™	EPC-210-EIP	EPU-220	



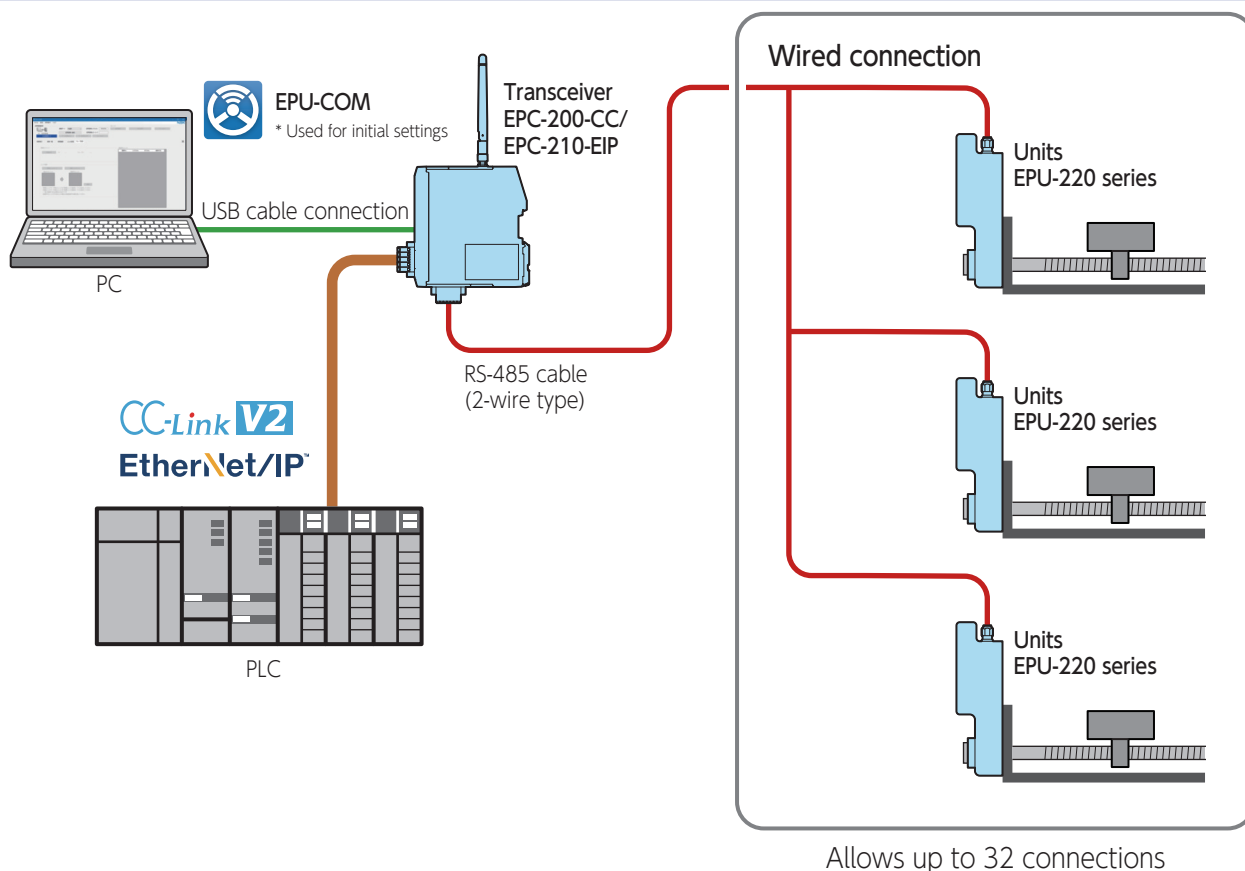
- This can also be used in combination with the wired communication of the EPU-220 series in Connection Example ⑦. In that case, the maximum number of units that can be connected is 32, regardless of whether wired or wireless.
- If using a PLC for control, after all unit settings have been specified, write the data into the transceiver. You can change control from the EPU-COM to the PLC by disconnecting the PC device from the transceiver.
- Connect each unit to a 24 VDC power supply.

The EPU-100 and EPL-48-D6-D6 have been discontinued as of June 2024.

2 Equipment Selection

Connection Example ⑦

Host	Unit Connection Method	Host Connection Method	Transceiver	Unit	Software
PLC	Wired	CC-Link Ver. 2.00	EPC-200-CC	EPU-220	EPU-COM
		EtherNet/IP™	EPC-210-EIP		



Point

- If using wired communication for the EPU-220 series, each unit is connected together from the EPC-200-CC in a series (daisy chain connection).
- This can also be used in combination with the wireless communication of the EPU-220 series in Connection Example ⑥. In that case, the maximum number of units that can be connected is 32, regardless of whether wired or wireless.
- If using a PLC for control, after all unit settings have been specified, write the data into the transceiver. You can change control from the EPU-COM to the PLC by disconnecting the PC device from the transceiver.
- Connect each unit to a 24 VDC power supply.
- Using the EORP-200 repeater hubs allows for easy wired connections for wireless positioning units. For more information, please refer to the [Repeater Hubs EORP-200 Instruction Manual](#). If using repeater hubs, please use units with connector for the cable end specifications.

2 Equipment Selection

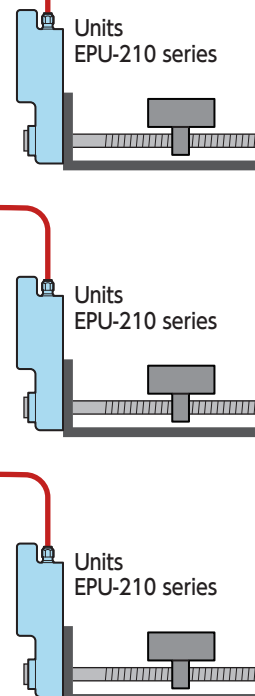
Connection Example ⑧

Host	Unit Connection Method	Host Connection Method	Transceiver	Unit	Software
PLC	Wired	RS-485 (Modbus RTU)	—	EPU-210	—



Modbus RTU communication
RS-485 cable (2-wire type)

Wired connection



Allows up to 32 connections



Point

- If using wired communication for the EPU-210 series, each unit is connected together from the PLC in a series (daisy chain connection).
- Using the EORP-200 repeater hubs allows for easy wired connections for wired positioning units. For more information, please refer to the [Repeater Hubs EORP-200 Instruction Manual](#). If using repeater hubs, please use units with connector for the cable end specifications.
- Connect each unit to a 24 VDC power supply.

2 Equipment Selection

Connection Example ⑨

Host	Unit Connection Method	Host Connection Method	Transceiver	Unit	Software
None	—	—	—	EPU-210	—



Point

The EPU-210 series can perform settings and control independently, without being connected to a superior host (PC or PLC). For operating methods, please refer to the [Wired Positioning Units - Modbus Compliant EPU210 Instruction Manual](#).

MEMO

Revision History

Date	ID No.	Revision Details
Oct. 2019	UM-EPU-SC-01E	First edition
Apr. 2021	UM-EPU-SC-02E	Revision due to release of new series
Jun. 2024	UM-EPU-SC-03E	Added a note regarding the discontinuation of the EPU-100 and EPL-48-D6-D6.

