

## Repeater Hubs

# EORP-200

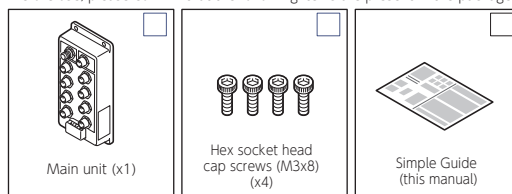
## Simple Guide



**NBK**  
Couplings, Screws, Clampers

### [Package Contents]

Before use, please confirm that the following items are present in the package.



### [Related Instruction Manuals]

The following instruction manuals are available for products other than the one covered in this Simple Guide.

- Repeater Hubs (EORP-200) Instruction Manual**  
Contains detailed explanations regarding this product. Be sure to thoroughly read this manual before using this product.
- Wireless Positioning Units (EPU-220) Instruction Manual**  
Contains detailed explanations required to operate the wireless positioning units that connect to this product.
- Wired Positioning Units - Modbus Compliant (EPU-210) Instruction Manual**  
Contains detailed explanations required to operate the wired positioning units that connect to this product.

[Instruction Manual Download Link]  
[https://www.nbk1560.com/products/mechatronics/positioning\\_unit/download/eorp-200-manual/](https://www.nbk1560.com/products/mechatronics/positioning_unit/download/eorp-200-manual/)

We wish to thank you for purchasing this Repeater Hubs (EORP-200) from NBK.

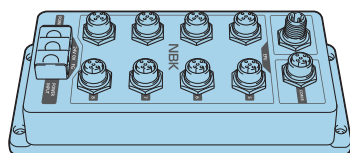
This manual (Simple Guide) only contains a brief overview of this product.

Before using this product, carefully read this Simple Guide as well as the more detailed Repeater Hubs (EORP-200) Instruction Manual to ensure proper and safe operation.

## Product Overview

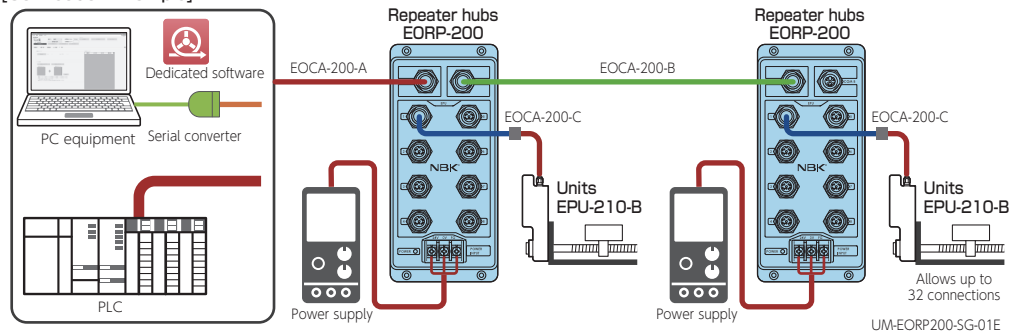
### Repeater hubs (EORP-200)

- Wired/Wireless positioning units can be easily connected using cables.
- Up to eight wired/wireless positioning units can be connected to a single repeater hub unit.



- Optional**  
**Cables for repeater hubs (EOCA-200-A)**  
Cables which connect repeater hubs to the hosts (PC/PLC) or the receivers. It is possible to connect to a USB port on your PC via a serial converter.
- Optional**  
**Cables for repeater hubs (EOCA-200-B)**  
Cables which connect two different repeater hubs.
- Optional**  
**Cables for repeater hubs (EOCA-200-C)**  
Extension cables which connect the repeater hubs and the wired/wireless positioning units.

### [Connection Example]



## Safety Precautions

To ensure safety, please thoroughly read the following precautions and understand correctly before using this product.

- (1) When setting up a system that includes wired/wireless positioning units, be sure to confirm the specifications of each equipment and device used in the system, and make sure that they are operated within their specified ratings and performance limits. Be sure to implement appropriate safety measures such as installing a safety circuit that minimizes danger even in the event of a failure.
- (2) To ensure safe operation of the wired/wireless positioning units, be sure to thoroughly read the Safety Precautions and EMC Precautions in the instruction manual for each equipment or device used in this product and its system.
- (3) Customers are requested to confirm all standards and regulations that apply to the wired/wireless positioning units.
- (4) Improper handling or misuse may lead to an accident or shorten the service life of the product.
- (5) Unless otherwise stipulated by law, we shall not be held liable for any damages resulting from improper use by the customer or a third party, failures that occur during use, other defects, or damages caused by the use of this product.



Indicates that improper handling can lead to a dangerous situation that may result in death or serious injury

### Precautions Related to Installation and Wiring Work

#### [Precautions to Prevent Injury, Electric Shock, Fire, or Failure]

- Be sure to install the product in a safe and secure manner to prevent fire or accidents in case of an earthquake.
- Do not install in a place with high humidity or an excessive amount of dust.
- \* Please contact us if you wish to use it in a special environment or a purpose that it was not designed for.
- Ensure that no dust or foreign material enters into connectors not being used for an extended period of time.
- Be sure to securely install the protective cover after connecting the power supply terminals.
- Ensure that wiring work is performed after installation and the power supply terminal connections are properly insulated.
- Be sure to install an external emergency stop circuit so that operation is immediately stopped and the power is shut off in the event of an abnormality.
- Make sure that the power supply and other cords are protected from damage.
- Ensure that fragments of metal cannot enter the product, it is protected from splashes of water, and it is always kept dry.
- Do not install the product or perform wiring work with wet hands.
- Do not install the product in a place where it will be exposed to violent vibration or shock.

### Precautions Related to Operation and Inspection

#### [Precautions to Prevent Injury, Electric Shock, Fire, or Failure]

- Be sure to perform maintenance and inspection on a monthly basis and ensure that adequate space is provided for such work.
- Do not disassemble, repair, or modify the product.
- If you observe a failure, immediately shut off the power supply and do not turn it back on.
- Do not move, inspect, or perform wiring work while the product power is on.
- Do not handle flammable gas in the vicinity of the product.
- Do not operate with wet hands.



Indicates that improper handling may lead to minor injury or damage to this product or peripheral equipment

### Precautions Related to Installation and Wiring Work

#### [Precautions to Prevent Injury, Electric Shock, Fire, or Failure]

- Ensure that the wiring work is correctly performed and install according to the specified procedure.
- Be sure to use a DC power supply (+24 V) that provides stable operation to power a 24 VDC SELV circuit.
- When wiring up a SELV circuit for the power supply (+24 V), pay particular attention to the polarity of the terminals.
- Be sure to securely connect the SELV circuit so that it will not detach off or be loose.
- Install the product in a location with an ambient temperature ranging from -5 to 55°C (23 to 131°F) (no freezing) and an ambient humidity ranging from 20 to 85% RH (no condensation).
- When attaching a connector into the repeater hub, pay attention to the position of the notches to fit in, insert it straight and securely, and ensure that the screws are not loose.
- Be sure to disconnect the power cable and connectors when moving the repeater hub.
- Install the product in a location that allows an appropriate work space for operation, adjustment, and maintenance.

- Do not use the product outdoors or in places where it may be exposed to direct sunlight (UV rays).
- Do not use the product in places with a generation of static electricity.
- Do not directly connect the product to an AC power supply.
- Do not apply voltage with any power supply other than that specified.
- Do not stack the product.
- Avoid strong impacts or other damage.
- When attaching a connector to the repeater hub, do not forcibly tighten or apply excessive force.

### Precautions Related to Operation and Inspection

#### [Precautions to Prevent Injury, Fire, or Failure]

- Be sure to turn off the power if you plan on not using the product for an extended period of time.
- Do not continue to use the product if it has been damaged.
- Do not frequently turn the power on and off.
- Do not stand on or place heavy objects on top of the product.

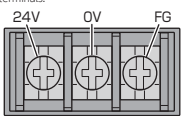
## Installation Requirements

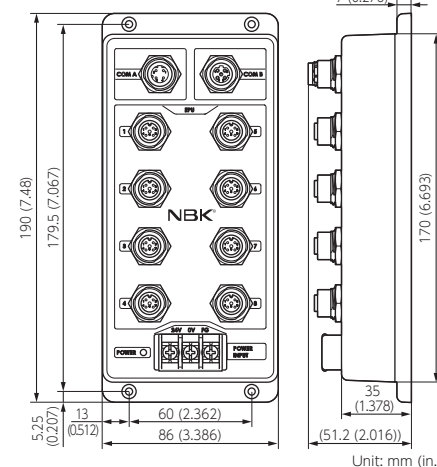
The environmental conditions for installation are shown below. Be sure to install the product in an appropriate environment.

- An indoor environment.
- A place where it is not exposed to direct sunlight (UV rays).
- A place free of continuous vibration.
- An installation surface that has sufficient strength.
- A place with little dust and free of exposure to water or oil.
- An environment that facilitates the dissipation of heat.
- A place that allows easy inspection and cleaning.
- A location with an ambient temperature ranging from -5 to 55°C (23 to 131°F) (no freezing) and an ambient humidity ranging from 20 to 85% RH (no condensation).
- Avoid environments where it may be exposed to water, corrosive atmosphere, flammable gas, harmful gas, or near flammable materials.

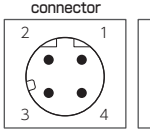
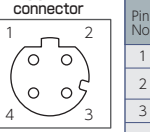
# Part Names and Functions / Dimensional Outline Drawings

**EORP-200**

Name	Description
COM A connector	Used to connect the host or the transceiver, or a repeater hub that is close to the host.
COM B connector	Used to connect another repeated hub.
EPU connector x8	Used to connect the wired/wireless positioning units.
Power supply terminal block	Used to connect the power supply terminals.  Power supply voltage: 24 VDC±10% Current consumption: 60 mA (standby) 8 A (maximum)
Main unit mounting hole x4	Used to install the main unit.
Power lamp	Indicates whether the power is supplied.



Unit: mm (in.)

COM A connector		COM B connector	
	M12 D-code 4-pin shielded male		M12 D-code 4-pin shielded female

COM A connector/COM B connector			
Pin No.	Name	Description	
1	—	—	—
2	D+	CA	RS-485 communication signal (A)
3	DG	CS	RS-485 GND/Shield
4	D-	CB	RS-485 communication signal (B)
SLD	—	—	—

EPU connector		
Pin No.	Name	Description
1	24V	24V
2	D+	CA
3	0V	0V
4	D-	CB
SLD	DG	CS

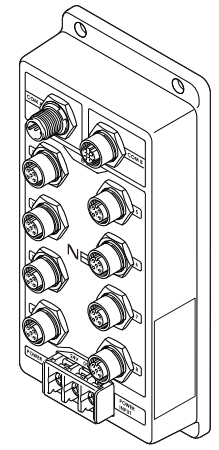
# Inspection and Maintenance

To ensure safe operation, be sure to perform inspections on a monthly basis. If any abnormality is found, immediately stop operation and do not restart until the issue has been resolved.

## [Precautions for Inspection]

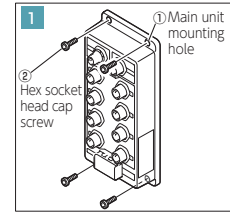
- The operator shall be responsible for turning the power on and off.
- Be sure to carry out the following inspections to prevent accidents.

Inspection Checklist	
1	Is the power supply voltage within the specified range? <input type="checkbox"/>
2	Is the operating environment within the specification ranges? <input type="checkbox"/>
3	Are there any other abnormalities such as foreign odor or heat generation? <input type="checkbox"/>
4	Is there adhesion of dust or other foreign material? <input type="checkbox"/>
5	Are the power supply connections or other connectors loose or displaced? <input type="checkbox"/>
6	Is any cable damaged or excessively stressed? <input type="checkbox"/>
7	Is there any scratch or deformation on the main unit? <input type="checkbox"/>



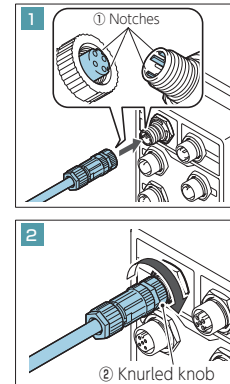
# Installation

## Main Unit Installation



Mount the product by using the ① Main unit mounting holes and the four included ② Hex socket head cap screws (M3x8). (Recommended tightening torque: 0.3 N m (2.65 lbf in.))

## Connector Installation



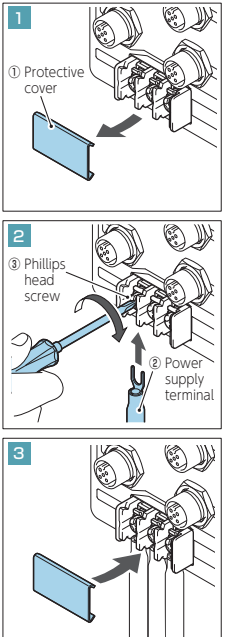
Confirm the position of the ① Notches and insert the connector straight into the repeater hub.

Secure the connection by tightening the ② Knurled knob at the end of the connector on the cable.

**CAUTION**  
Tighten the knurled knob by hand until it is finger tight. Do not use a tool such as pliers.

# Wiring

## Power Supply Wiring



Remove the ① Protective cover from the terminal block.

Insert the ② Power supply terminal into the terminal block and secure it in place with the ③ Phillips head screw. (Recommended tightening torque: 1.2 N m (10.6 lbf in.))

**CAUTION**  
Do not use excessive force when tightening the Phillips head screw.

Reattach the protective cover removed in step ① to the power supply terminal block.

**CAUTION**  
Ensure that the protective cover is installed to prevent an electrical leakage or a short circuit.

# Specifications

## Repeater Hubs (EORP-200)

Operating environment	Temperature	-5 to 55°C (23 to 131°F) (no freezing)
	Humidity	20 to 85% RH (no condensation)
Power supply voltage	DC24V±10%	
Current consumption	Standby	60mA
	Max.	8A
Interfaces	COM A connector	RS-485 M12 D-code 4-pin shielded male
	COM B connector	RS-485 M12 D-code 4-pin shielded female
	EPU connector	(RS-485 +24 V power supply) x8 M12 A-code 4-pin shielded female
External dimensions	86 mm x 190 mm x 51.2 mm (3.386 in. x 7.48 in. x 2.016 in.)	
Mass	330 g (11.64 oz)	

## Warranty Information

[Warranty Period] One year after delivery.  
 [Warranty Scope] Under normal usage conditions in accordance with this manual, repairs or replacement shall be provided free of charge as long as the failure occurred within the warranty period.  
 [Warranty Conditions] Even within the warranty period, a fee may be charged in any of the following cases:

- When the issue related to the claim was caused by improper use, repairs, or modifications.
- When the issue related to the claim was caused by the product being dropped after purchase, or damage during transportation.
- When the issue related to the claim was caused by usage outside of the product specifications.
- When the issue related to the claim was caused by fire, earthquake, lightning, wind and flood damage, salt damage, abnormal power supply voltage, or any other man-made or natural disaster.
- When the issue related to the claim was caused by exposure to water, oil, fragments of metal, or other foreign materials.

\* This warranty only covers the product (main unit) itself. Secondary damage caused by the product failure shall not be covered.

## Contact :

Customer Service Business Hours: 8:00 to 17:00 on weekdays, Eastern Standard Time

+1 (484) 685-7500      +1 (484) 685-7600

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