

# Anywire AnyWire System Products Guide

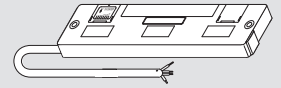
## AnyWire Bitty Series Through-beam type picking detection terminal

**A027PB-T02G-P** (Transmitter unit)

**A027XB-T02G-C** (Receiver unit)

Picking confirmation input

Picking indicator lamp (Green)



This AnyWire System Products Guide describes individual products. Please read and understand the contents of this document.

### [Safety Precautions]

To ensure safe use of the products, the following symbols and indications are used for instructions. Be sure to observe all these instructions.

**WARNING** Indicates a potentially hazardous condition that improper handling of the product may result in death or serious injury. / **CAUTION** Indicates a potentially hazardous condition that improper handling of the product may result in personal injury or property damage.

**WARNING**

- Consideration of system safety  
This system is intended for general industrial use, which does not provide functions suitable for applications that need higher safety, such as equipment for securing safety and accident preventing system.
- Always turn off the power in installing or replacing the system.

**CAUTION**

- Power supply for the system  
Use a 24V DC stabilized power supply. If a non-stabilized power supply is used, it causes malfunction of the system.
- Isolation from high-voltage line and drive power line  
The AnyWire Bitty series provides high noise margin, but the transmission line and I/O cables should be placed at a distance from a high-voltage line and drive power line.
- Connector and terminal connections
  - The cable length and cable fastening method should be considered so that no load is applied to each connector and connection cable, and that the connector and cable will not come off.
  - Be careful not to allow metal chips or other objects to enter the connectors and the terminal block.
  - Short-circuiting the terminals with metal chips or incorrect wiring of the equipment may result in damage to the equipment.
- Avoid installation in a condition that the equipment is exposed to external stress. Applying external stress causes a fault of the equipment.
- Do not disconnect or reconnect between the transmission line and slave units when the transmission line is active. Failure to observe this instruction causes malfunction of the equipment.
- Do not use the AnyWire Bitty series power supply for other purposes such as to turn ON/OFF a parallel signal of SBC (Single Board Controller), other controller and so on. Using individual power supplies in common may cause a fault of the system.
- The AnyWire Bitty series should be used in conformity to the specifications and conditions described below.

### [Features]

- This unit is applicable to the AnyWire Bitty series.
- Through-beam type picking detection unit.
- When the optical axis is interrupted, the input turns ON.
- Connections of the transmission and power supply lines are enabled with a general-purpose 2-wire cable.

### [Warranty]

- Warranty period  
The warranty period of the delivered product shall be one year after delivery to the place specified by the customer.
- Scope of warranty  
If a fault occurs with the product during use under normal operating conditions according to the description of this Products Guide and the product specifications within the above warranty period, we shall replace or repair the fault part of the equipment free of charge.  
Note: The following cases are exempted from the scope of warranty:
  - (1) User's improper handling or use of the product
  - (2) When the fault is caused by any factor other than the delivered product
  - (3) When the fault is caused by modification or repair of the product by any person other than the supplier
  - (4) When the fault is caused by a natural disaster or other factor which is not attributable to the supplier
 The term "Warranty" mentioned here means warranty of the delivered product only. We shall not be liable for incidental damage resulting from a fault of the delivered product.
- Repair at user's cost  
Investigations and repairs after elapse of the warranty period shall be conducted at user's cost.  
Even in the warranty period, we shall accept order of repair of a fault or investigation of a cause of a fault beyond the above scope of warranty at user's cost.
- Changes in the product specifications and the descriptions in the manual  
The descriptions in this manual may be subject to change without notice.

### [Type]

Bit operation

A027PB-T02G-P (Transmitter unit)	1-point output	Picking indicator lamp (Green)
A027XB-T02G-C (Receiver unit)	1-point output	Picking indicator lamp (Green)
	1-point input	Picking confirmation input

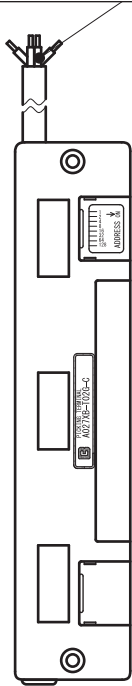
# [Connections]

The transmitter unit and receiver unit have a cabtyre cable for connection to a transmission line each. Connect the cable of each unit to a transmission line via a screw terminal block, link connector, etc. by branch connection. For the trunk line, use a cable with 0.75mm<sup>2</sup> or larger cross-section area.

## ■ Specifications of the cable

Purpose of connection	Sheath outer diameter	Number of wires	Core wire size	Cable length	Wire color/Signal name
For connection to transmission line	φ6	4 wires	AWG #20*	Approx. 500mm	DN: Black (Transmission line -) DP: Red (Transmission line +) 0V: White (0V) 24V: Green (24V DC)

\* Do not extend this cable with an AWG #20 cable.



■ When a link connector is connected to the end of the unit cable by crimping wires

Use link connector 38104-F020-H00 FL manufactured by Sumitomo 3M.

■ Pin Nos., signal names and cable colors of link connector for crimp-connection

- 1=DN (Black)
- 2=DP (Red)
- 3=0V (White)
- 4=24V (Green)

This figure shows an example of A027XB-T02G-C (receiver unit). Layout of A027PB-T02G-P (transmitter unit) is the same.

**CAUTION** For crimp-connection of the link connector, use a dedicated crimping tool to ensure stable connection.

Suzuden Corporation  
Type: L-Tool-N

## ● Transmission line

For connection of the AnyWire Bitty series, use a 4-wire cable (with DP and DN transmission lines and 24V and 0V power supply lines). Provide a general-purpose 24V DC stabilized power supply unit, which should be dedicated to the AnyWire system. For power supply dedicated to the AnyWire system, select a power supply unit with a capacity 1.3 times or larger than the required current consumption.

To ensure effective use of power through the power supply superimposed transmission line, it is recommended that the master unit on the transmission line should be placed near the rack.

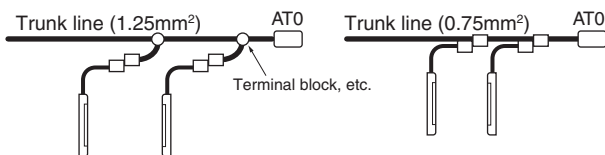
For the DP and DN lines, a commercially available 4-wire cabtyre cable can be used.

The length of transmission line should be 50m max. (total extension length including the unit cable).

For the trunk transmission line, use a cable with 0.75mm<sup>2</sup> or larger cross-section area.

When the dedicated flat cable (FK4-075-100) is used, T-branch connection via link connectors is enabled.

As variations of link connectors, the maximum applicable wire size is 0.75mm<sup>2</sup>. When the trunk line cable size is 1.25mm<sup>2</sup>, the unit cable should be directly connected to a screw terminal block for branch connection to the trunk line, or when link connectors are provided, the unit cable should be relayed by the link connectors, and then connected to the screw terminal block for branch connection to the trunk line.



Connect the AT0 terminator to the farthest end of the transmission line.

## ● Number of units that can be connected

Up to 22 units of A027PB-T02G-P and A027XB-T02G-C can be connected to one master unit on the transmission line.

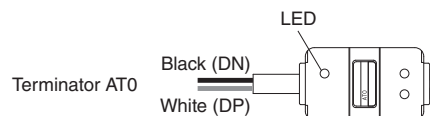


The transmission line should be placed away from a high-voltage line or power line as far as possible. The transmission cable of the AnyWire Bitty series should be singly laid for each system. Transmission cables for two or more systems should not be laid together. Failure to observe these instructions causes malfunction of the equipment.

● Select and purchase link connectors suitable for the cable being connected.

Type of link connector (Example)

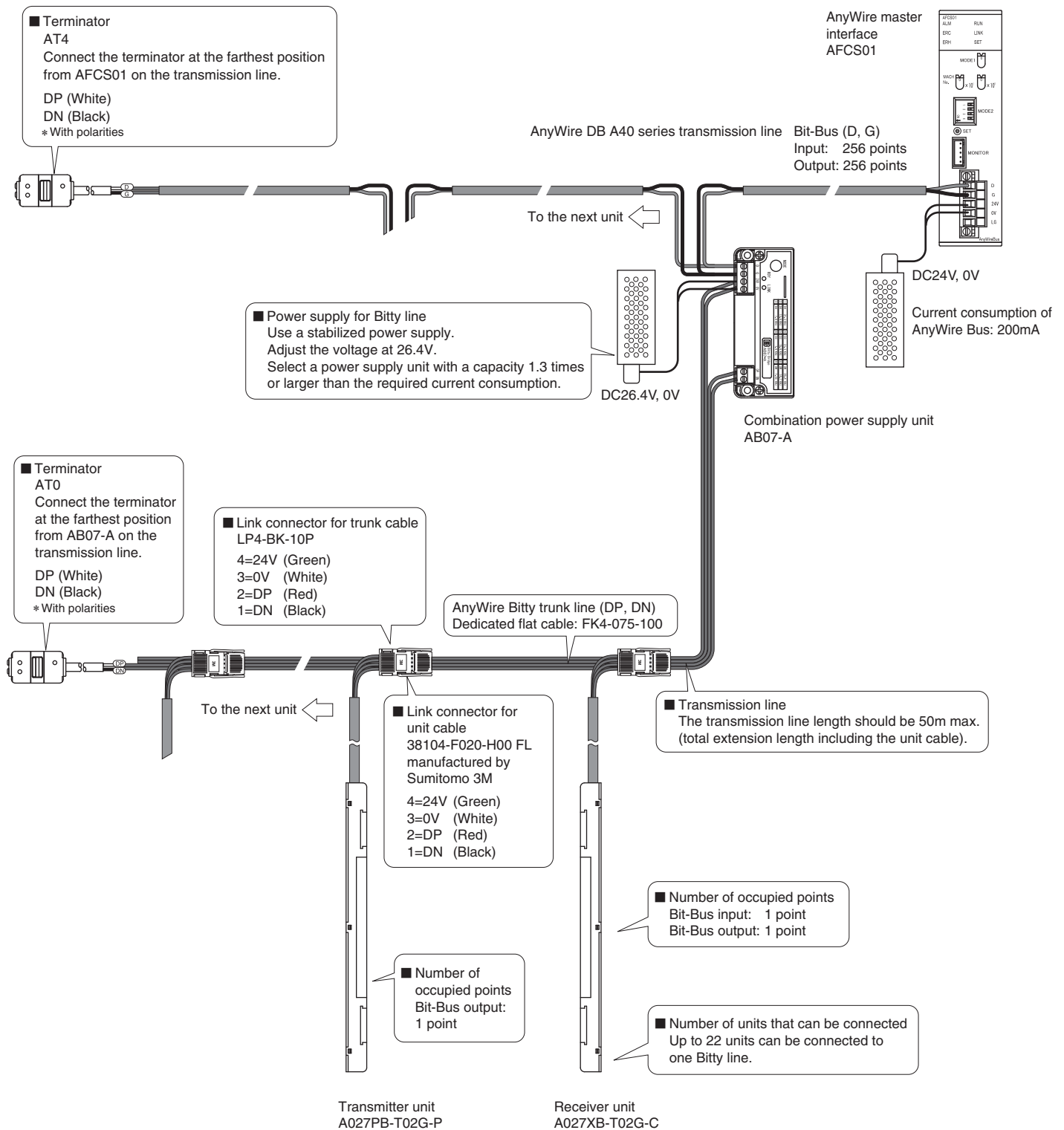
	Wire sheath diameter	Type of connector (manufactured by 3M Japan)
Link connector for 0.75mm <sup>2</sup> cabtyre cable	Dedicated flat cable or equivalent	38104-0018-000 FL
	φ 1.8 to 2.1	38104-F018-F00 FL
	φ 2.1 to 2.4	38104-E018-E00 FL



The terminator (AT0) is a composite device for stabilizing transmission waveforms. The terminator should be connected at the farthest position from the master unit on the transmission line. Be careful about the polarities. (The LED is lit in normal status.) Incorrect wiring causes malfunction or fault of the equipment.

## [Example of Connections]

An example of connections from the AnyWire master interface (AFCS01) to the transmitter unit (A027PB-T02G-P) and the receiver unit (A027XB-T02G-C) is shown below. This figure shows a case of branch connections via link connectors.



## [Address Setting]

- The address No. is intended to specify the relation with the controller's I/O memory map.
- Set an address of A027PB-T02G-P and A027XB-T02G-C with the address setting switches.  
The set number indicates input/output address of the relevant unit, for which 1 point is occupied.
- With this terminal,  
data verification and updating  
are executed by the unit of bit.
- Enables setting by the unit of 1 point.
- "255" cannot be set.

- The address setting of A027PB-T02G-P and A027XB-T02G-C as pair units must be the same value.  
If these units are set at different addresses, operation is disabled.

The picking indicator lamp is provided on A027PB-T02G-P and A027XB-T02G-C, which corresponds to Bit-Bus output.  
The picking confirmation input is issued from A027XB-T02G-C, which corresponds to Bit-Bus input.

### Example of setting

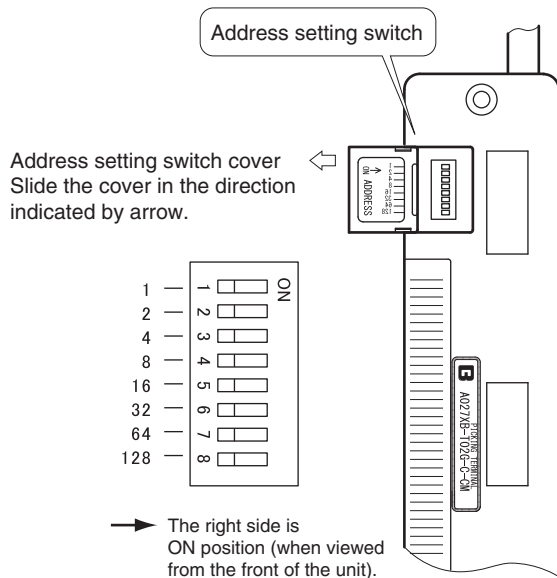
Bit address	Switch setting							
	1	2	4	8	16	32	64	128
0								
:	:	:	:	:	:	:	:	:
6		○	○					
:	:	:	:	:	:	:	:	:
255	○	○	○	○	○	○	○	○

\*Speed setting is not required.

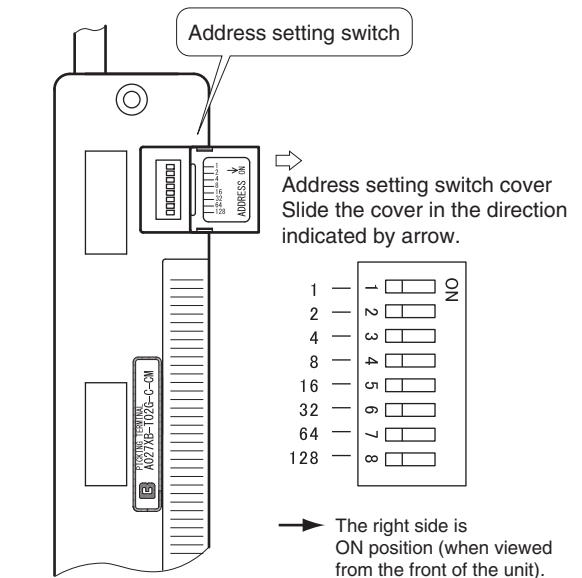
\*Make sure that the maximum number of transmission points is not exceeded (including the number of points of the terminal itself).



If you change a switch setting, be sure to turn OFF the power supply for the AnyWire system in advance. If you change a switch setting with the power supply turned ON, it causes malfunction of the unit.



Transmitter unit (front view)  
A027PB-T02G-P



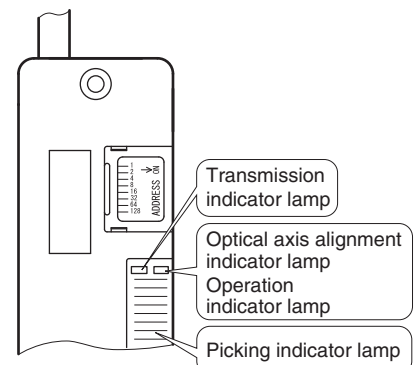
Receiver unit (front view)  
A027XB-T02G-C

## [Monitor Display]

- This equipment provides a monitor function.
- The LINK lamp indicates system status as shown in the table below.
- If the indication is other than normal status, turn OFF the power supply immediately, and eliminate the cause of the error. Then, after ensuring safety, turn ON the power supply again.
- The optical axis alignment indicator lamp of the receiver unit will turn off when the optical axes between the receiver unit and transmitter unit are aligned, and the unit is brought into operation status.
- During operation status, the operation indicator is activated. When any of the optical axes is interrupted, the input turns ON.

LED indicator	Indication status	Monitored condition
LINK (Green)	Flashing	Normal
	Unlit	Power OFF
	Lit	Transmission error
	Unlit	
Optical axis alignment indicator lamp (Green)	Unlit	Alignment
	Lit	Misalignment
	Unlit	Input OFF
	Lit	Input ON

Lit    Unlit



Receiver unit (front view)  
A027XB-T02G-C

## [Installation and Detection]

Three detecting positions are provided for one unit.  
Install the transmitter unit and receiver unit so that the optical axes are aligned.  
The optical axis alignment indicator lamp on the receiver unit can be used to check if the optical axes are aligned or not.

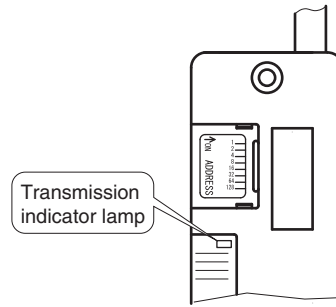
At receipt of a transmission clock signal, the transmission indicator lamp on the transmitter unit blinks, and the unit is brought into operation status.

At receipt of a transmission clock signal, the transmission indicator lamp on the receiver unit blinks, and simultaneously the optical axis alignment indicator lamp lights.

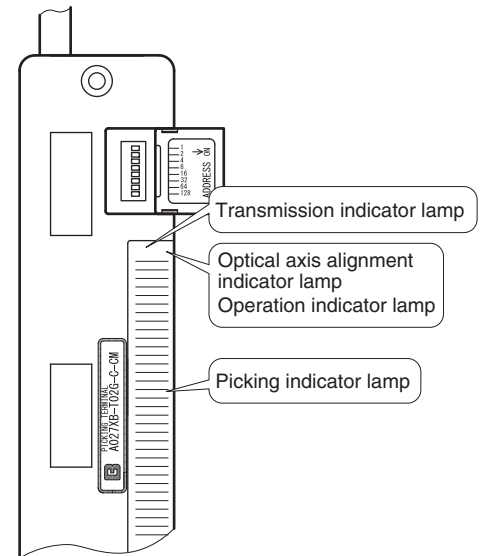
When the receiver unit receives a light signal from the transmitter unit, the initial setting function is activated first, and after approx. 1 second, the optical axis alignment indicator lamp turns off, and the unit is brought into operation status.

After it is brought into operation status, the optical axis alignment indicator lamp lights when any of the optical axes is interrupted (ON detection).


If the optical axis alignment indicator lamp does not turn off:  
- Re-adjust the optical axis.  
- Check if the address setting for the transmitter unit is matched with that for the receiver unit.



Transmitter unit (front view)  
A027PB-T02G-P

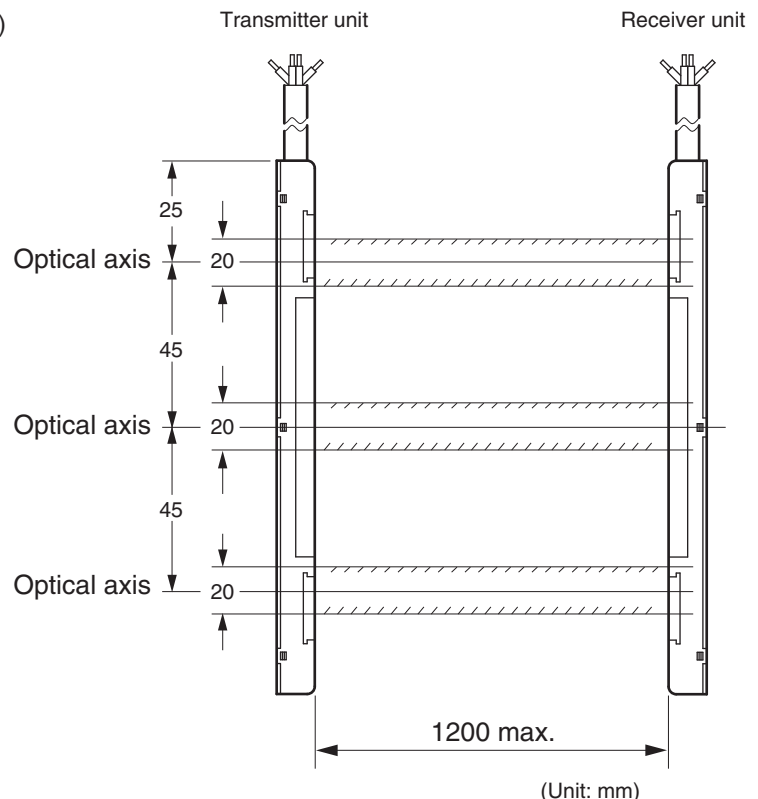


Receiver unit (front view)  
A027XB-T02G-C

For detection, interrupt the optical axis at any of three detecting positions (the area indicated with ) securely for at least 0.2 seconds.



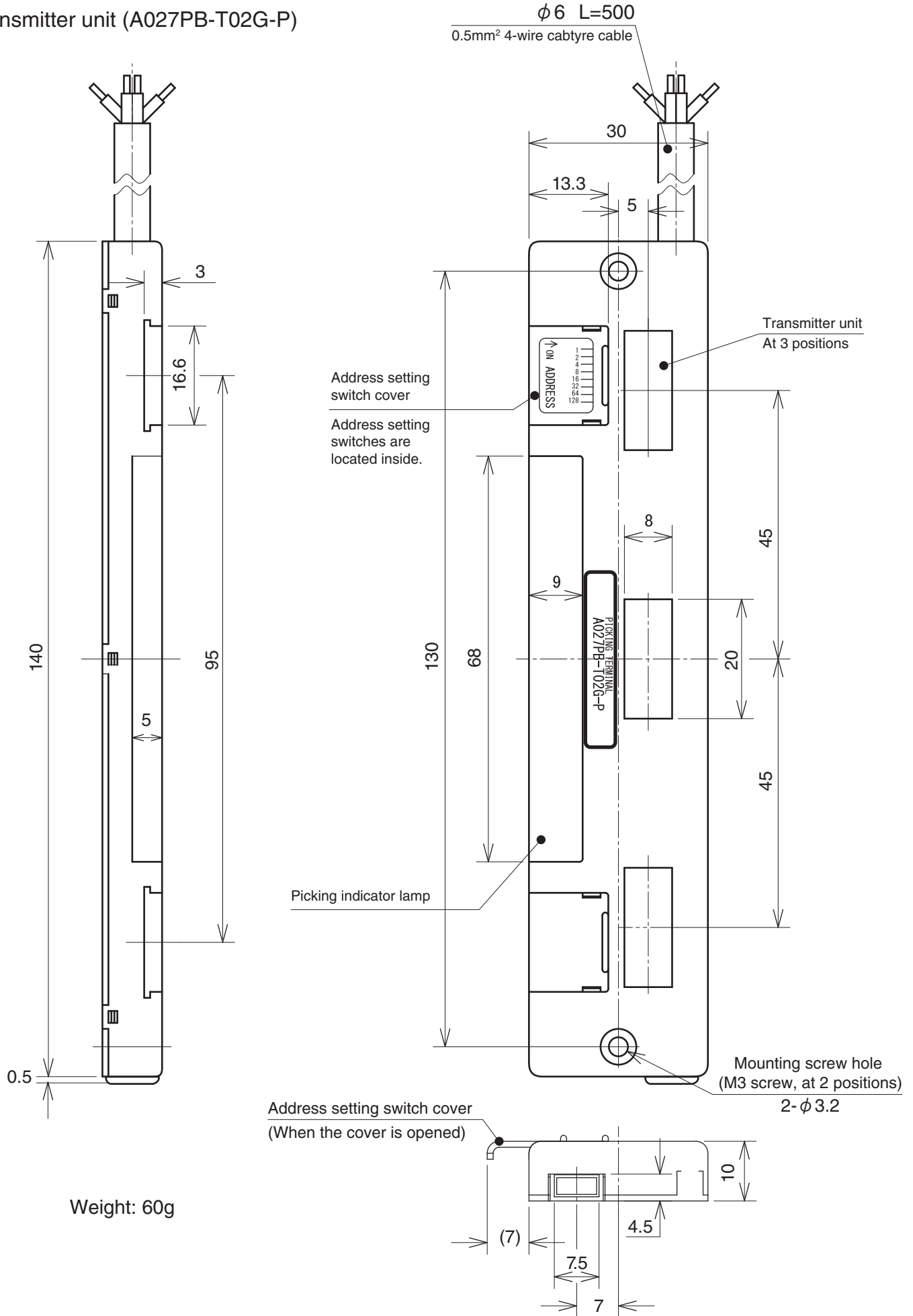
Do not pull the cable from the unit body with excessive force.  
Do not keep the cable in tensed condition.  
Failure to observe these instructions causes a fault of the equipment.



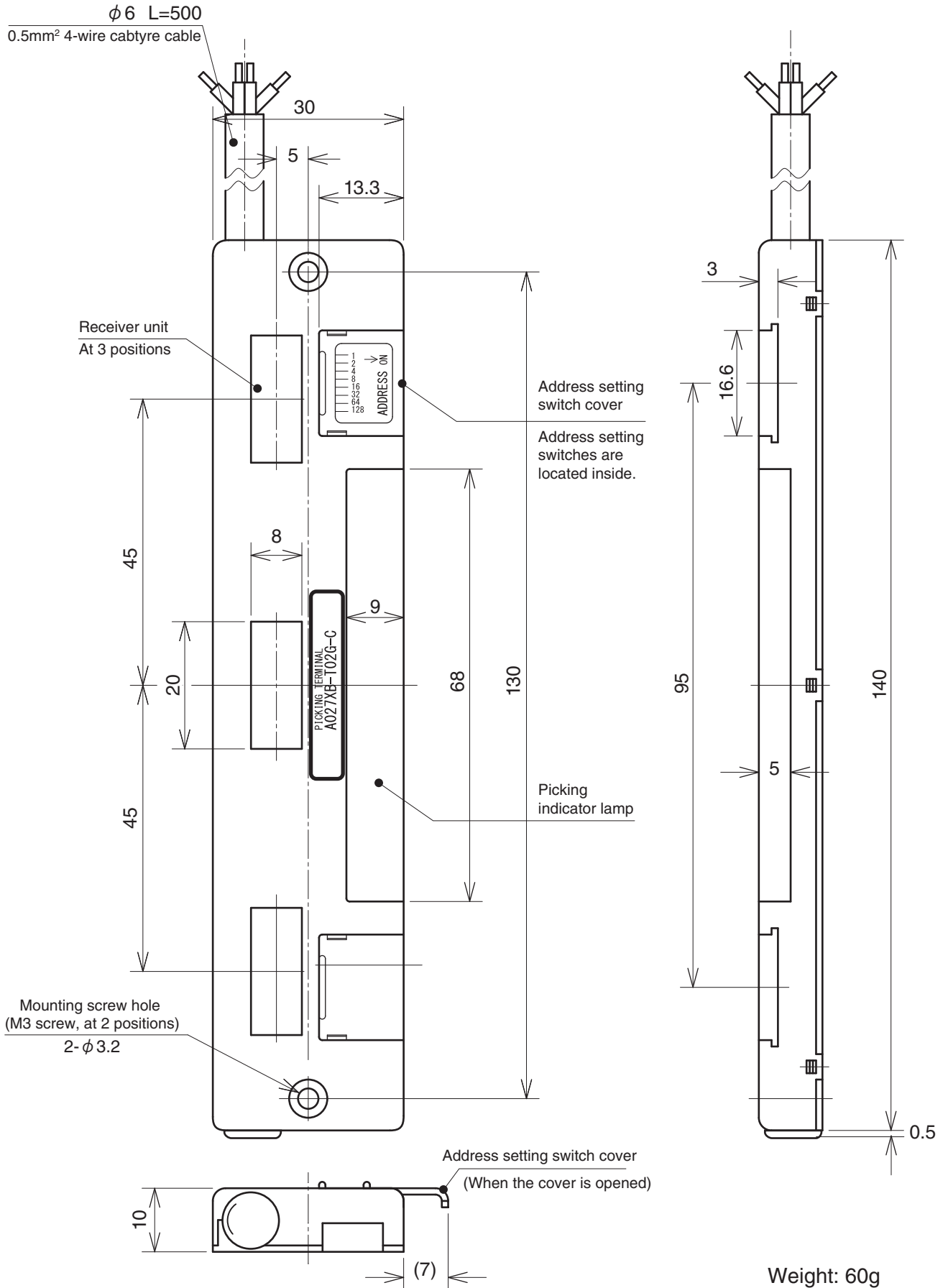
**[Outside Dimensions]**

Unit: mm

Transmitter unit (A027PB-T02G-P)



Receiver unit (A027XB-T02G-C)



## 【中国版RoHS指令】

电子信息产品上所示标记是依据SJ/T11364-2006规定,按照电子信息产品污染控制标识要求制定。

本产品的环保使用期限为10年。如果遵守产品说明书中的操作条件使用电子信息产品,不会发生因产品中的有害物质泄漏或突发异变而引发严重的环境污染,人身事故,或损坏财产等情况。

的产品中有害物质的名称及含量

部件名称	有害物质					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 [Cr(VI)]	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
安装基板	×	○	○	○	○	○
框架	○	○	○	○	○	○

本表格依据SJ/T11364的规定编制。

○:表示该有害物质在该部件所有均质材料中的含量均在GB/T26572规定的限量要求以下。  
×:表示该有害物质至少在该部件的某一均质材料中的含量超出GB/T26572规定的限量要求。



基于中国标准法的参考规格:GB/T15969.2

## [Address]

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