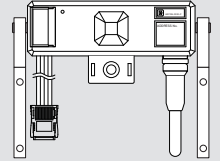


# AnyWire POKA-YOKE Terminal series

Door type POKA-YOKE Terminal

## A027XB-F02□3-P



Replaceable lever input

Eject indicator lamp (Green) (Red)

Protruding transmission line and flat cable

AnyWire is the registered trademark of Anywire Corporation in Japan.

The **AnyWire System Products Guide** describes individual products. Refer to the Guide as necessary.

### [Notes on Safety]

Precautions that must be observed in order to use this system safely are indicated as shown below.

You must observe these precautions.



A **WARNING** indicates a potentially hazardous situation which, if not handled correctly, could result in death or serious injury.



A **CAUTION** indicates a potentially hazardous situation which, if not handled correctly, may result in personal injury or property damage.



- System Safety  
This system is intended for general industrial applications. It does not have functions for supporting applications requiring higher levels of safety such as safety-related devices or accident prevention systems. The product must not be used for these purposes.
- Always turn off the power before attempting to mount or replace.



- System power supply  
Use a stable, 24V DC power supply. Use of an unstable power supply may cause problems with the system.
- Separately route high-voltage and power cables  
Although the **AnyWire** POKA-YOKE Terminal series has a high noise margin, keep the transmission line and I/O cables away from high-voltage and power cables.
- Connectors and terminals
  - \* Pay careful attention to the length and installation of cable wiring to ensure that connectors and cables are neither overloaded nor disconnected.
  - \* Make sure to prevent any metal objects from getting inside the connectors or the terminal blocks.
  - \* Short-circuits caused by metal objects or mis-wiring are likely to damage the device.
- Do not impose any external loads on the units. Doing so may cause a failure.
- Do not disconnect or reconnect between the transmission line and slave units. A malfunction may be caused.
- Do not use for power supply of **AnyWire** and for switching parallel signal for SBC (Single Board Controller) and controller, etc. Commonalization of mutual power supply systems may result in system failure.
- Use the **AnyWire** POKA-YOKE Terminal series within the range of the specifications and conditions shown below.

### [Features]

- \* This product is compatible with the AnyWire Bitty series.
- \* This product has a replaceable lever switch (input) and an indication to direct ejection (output) function.
- \* This product can be laid out with a φ28 pipe.
- \* Transmission and power supply can be connected with a 4-wire connection.
- \* This product has a flat cable equipped with a link connector for transmission line connection.
- \* Up to 64 units can be connected.  
The total extended distance for transmission is 100 m at maximum.
- \* The lever can be replaced.
- \* Equipped with electric arm compatible with the door type POKA-YOKE system.  
Angle and time are selectable, and flexibly compatible with the shelf.  
More reliable picking can be realized.

### [Warranty]

- Warranty period  
The warranty on the delivered Product shall continue to be effective for one (1) year after the delivery thereof to a location as designated by the original owner.
- Scope of warranty  
Should a defect occur in any part of the Product during the foregoing warranty period when it is used normally in accordance with the specifications described in this User's Manual, the Company shall replace or repair the defect free of charge, except when it arises as a result of:
  - [1] Misuse or abuse of the Product by the owner;
  - [2] Fault caused by other than the delivered Product;
  - [3] The unauthorized modification or repair of the Product by any person other than the Company's personnel;
  - [4] Any unusual force of nature, disaster or other cause beyond the Company's control.

The term "warranty," as used herein, refers to the warranty applicable to the delivered product alone. The Company shall not be liable for consequential or incidental damages resulting from any malfunction.
- Repair at cost  
After the expiration of the warranty period, the owner shall be responsible for all costs and expenses incurred for the troubleshooting and repair of the Product. Even during the warranty term, the Company shall repair any defects arising from causes other than within the scope of the warranty as specified above, at the owner's cost.

### [Type]

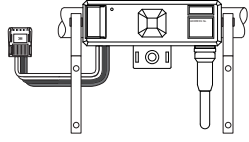



#### Bit Operation

A027XB-F02G3-P	One point input	Eject check input
	One point output	Eject indicator lamp (Green)
A027XB-F02R3-P	One point input	Eject check input
	One point output	Eject indicator lamp (Red)

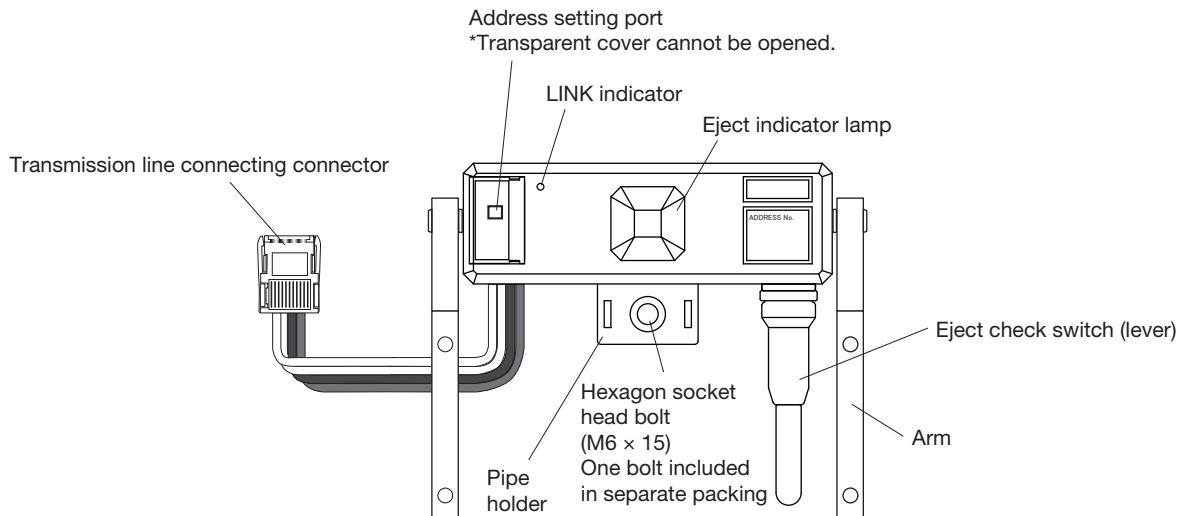
## [Items in Package]

A027XB-F02□3-P --- The following parts for one unit are included in a separate package. Check them when unpacking.

\* For operation setting, an address writer (ARW-02) is required. Please prepare it separately.

Item in Package	Description	Q'ty
	A027XB-F02□3-P unit	1
	Auxiliary plate for mounting corrugated plastic	2
	Corrugated plastic mounting screw (Truss black screw M4×10)	4
	Hexagon socket head bolt (M6×15)	1

## [Name of Each Part]



## [Items to Check before Starting]

Upon energization after properly performing the setting of the number of units and address and connection, the "LINK indicator" of A027XB-F02□3-P flashes.

■ If any condition other than flashing occurs:

Remove the cause of the trouble referring to the following:

- \* Items in the table on the right
- \* Indication of the AnyWire Master unit in use and the user's manual

■ Eject indicator lamp not lighting





If no input signal is input even when the lever of the eject check switch is tilted, check the following:



- \* Whether the address setting exceeds the number of transmission points
- \* Whether the indicator lamp is consistent with the memory map of the controller
- \* Whether an appropriate memory area is read or written, etc.

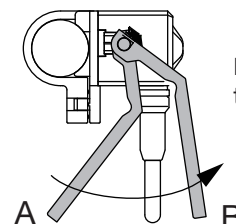
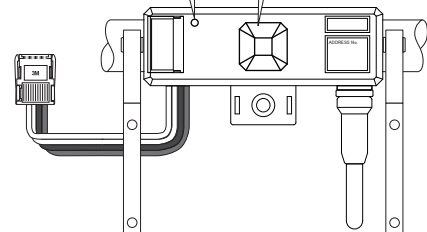
■ When the arm position has been turned to the pipe side more than the lever (A)

When the arm (door) has been turned to the pipe side more than the lever at the start, or during operation, manually turn the arm (door) to the front (side of the eject indicator lamp surface) and return it nearly to the position (B) on the front of the lever.

The arm (door) returns to the normal position at the time of the next upward and downward movement.

Indication LED	Indicated state	Monitor information
LINK (Red)	Flashing    	Transmission signal received
	Goes out	Disconnection of power
	Lights up	Abnormal transmission (disconnection, short-circuit)
Eject indicator lamp (Green) (Red)	Lights up	Eject indicator

 Lights up     Goes out



Return the arm nearly to the front of the lever.

# [Connection Example]



## ●Transmission line (Bitty line)

Connect transmission lines **DP** and **DN** correctly.

## ●Installation of transmission lines

Keep route transmission lines away from high-voltage and power cables.

Assign one transmission cable to one system of **AB023-□**. If multiple systems are used, assign a cable to each system. If multiple systems are combined by a multi-wire cable, a malfunction may occur.

## ●AnyWire transmission line error

When the transmission line is not working properly, **output is reset**.

## ●Power supply to the AnyWire System

Install an **AnyWire** system-dedicated power supply to provide 24V DC power.

Prepare a dedicated power supply.

Supply power to the entire system.

\*When the number of simultaneous output ON units is increased, power is locally supplied. For connection, see page 4.

### ■24V DC stabilized power source

\* Rated voltage: 24V - 27.6V

\* Power supply capacity:

$$[(19\text{mA} \times M) + (522\text{mA} \times N) + 200(\text{mA})] \times 1.3$$

M: Number of terminal units in standby state

N: Number of units to be simultaneously turned ON

When the transmission distance (total length) is within 100m: 32 units or less

### ■Transmission distance

within the maximum length of 100 m

\* The total length refers to the total of the used cables.

### ■Number of connection units (A027XB-F02□3-P)

\* Use a dedicated flat cable.

\* Power supply to the entire system

Under the above conditions, up to 64 units can be connected to AB023-□.

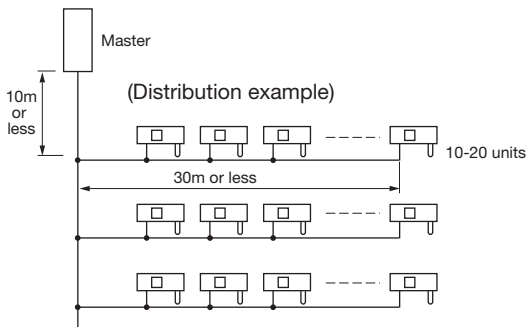
\*When this product is used in combination with A027XB-02□2-P, a total of 64 units or less should be used for one system.

### ■Number of simultaneously A027XB-F02□3-P

output ON points (number of units) is 32 points (32 units) or less.

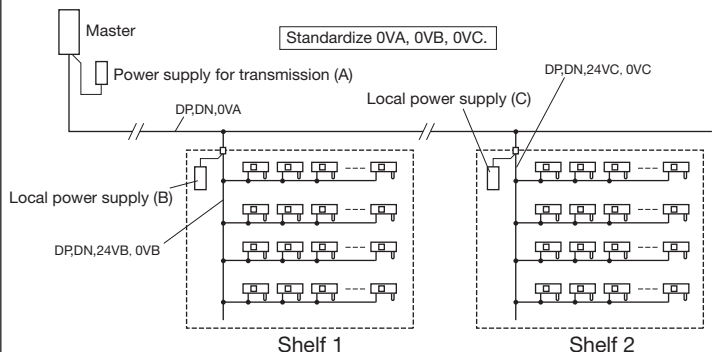
### ■Connection Configuration

The connection configuration (branch, branch line length) has no limitation. However, it is recommended to distribute the units evenly to enhance power efficiency.



### ■Connection Configuration

When increasing the number of units to simultaneously turn output on, install local power supply for each shelf. (For details of connection, see page 4.)



24V DC stabilized power supply for general-purpose

CC-Link  
DeviceNet, etc.

AnyWire Gateway compatible with Open Bus of each company

Model for CC-Link: AB023-C1L

Model for DeviceNet: AB023-D1

24V: Green  
0V: White  
DP: Red  
DN: Black

A027XB-F02□3-P

24V: Green  
0V: White  
D: Red  
G: Black

A027XB-F02□3-P

24V: Green  
0V: White  
D: Red  
G: Black

Terminator AT0  
LED  
Black (DN)  
White (DP)

**CAUTION** If operation of the door is prevented due to any external factor for approximately 6 seconds, the damage prevention function works to stop the open/close operation on the spot. In this case, eliminate the trouble factor and directly move the door, or return to the full close state once and then open and close the door again.

**CAUTION** If capacity of power supplied to the terminal is insufficient, open and close operation may stop even if there is no external stress. In this case, add a power supply line and reinforce by loop, etc., or increase the capacity of the power supply device.

**CAUTION** The terminator (AT0) is a module to stabilize the transmission wave form. Connect it at a position at the furthest end from the Master in the transmission line. Note that it has own polarities. (The LED lights up in a normal state.) Improper connection may cause a malfunction or a failure.

## [Connection]

### ■ Wiring of POKA-YOKE Terminal

- Use the cable with a connector protruding from the back of the unit.
- Connect the cable, being careful not to reverse the connection or cause a short circuit.
- When swaging with the link connector, we recommend using a dedicated tool that can realize stable work quality. (L-TOOL-N: SUZUDEN CORPORATION)

**CAUTION**

When making the connection, make sure that the cable is not under tension.

In addition, do not fix the unit while the cable is under tension. Incorrect connection may cause a contact failure.

Pay attention to the crimping direction of the link connector. Improper connection results in malfunction or failure.

The hinge part side of the connector cover is the black line.

For details on link connector pressure welding work, refer to "How to pressure-weld link connector to flat cable" in our separate manual. (Contact our Sales Department.)

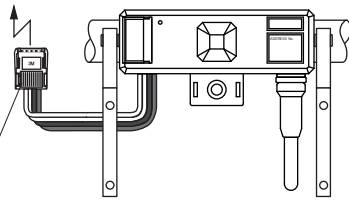
At time of terminal treatment

Connector cover

At time of intermediate treatment

Connector cover

To link connector on the trunk line side



Manufacturer: Sumitomo 3M Limited  
Applicable connector: Link connector **Included**

### ■ Link connector pin arrangement

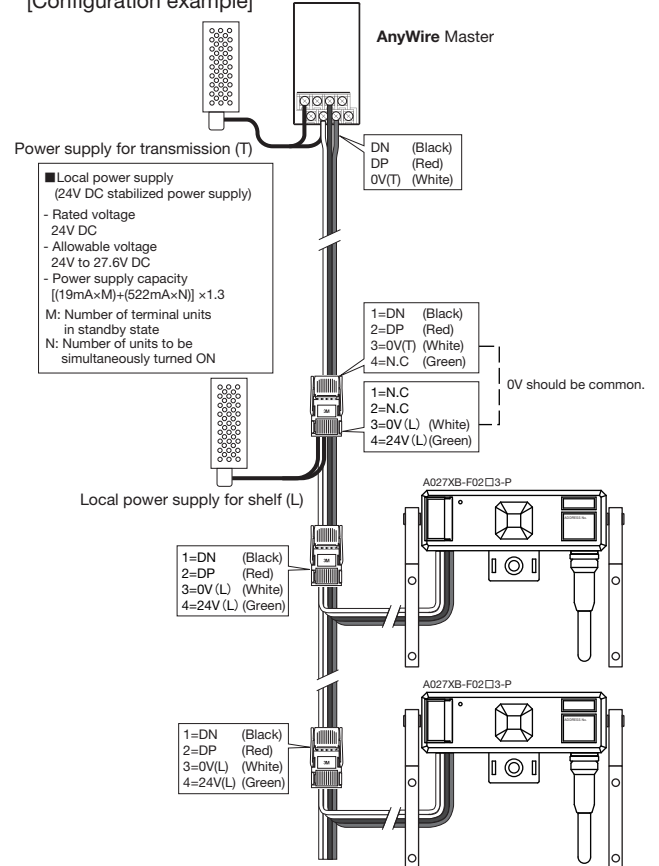
Pin No.	Description	Green
1	DN	Black
2	DP	Red
3	0V	White
4	24V	Green

Link connector is a female and male integrated connector. "Connection" and "branching" are easily carried out only by coupling the same type connectors.

### ■ How to increase simultaneous output of ON units

Install local power supply for each shelf.  
Transmission lines to connect to A027XB-F02□3-P in a range to which local power supply is supplied are 0V, DP and DN only.  
Then, additionally supply 24V and 0V of local power supply. At this time, 0V of the power supply for transmission should be common to 0V of the local power supply.

[Configuration example]



## [Installation Location]

- \* Location where the unit will not be subject to vibration or shock.
- \* Do not install the POKA-YOKE Terminal (AU27XB-F02□3-P) lengthwise.
- \* Where the body is not exposed to waste metal or sputter.
- \* Location where humidity is 35 to 85% RH, non-condensing.
- \* Location where the atmosphere is free of corrosive gas, flammable gas, and sulfur.
- \* Location where there are no high-voltage or high-current cables.
- \* Location where there are no cables and controllers that generate servo, inverter, or other high-frequency noise.

This unit does not have any special protective structure.

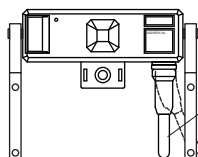
Do not install the unit lengthwise.

Protect the unit from shock (no more than 0.49 G). It may cause damage.

Do not install the unit in a location subject to constant vibration.

## [Eject Check Switch]

The lever of the eject check switch can be tilted in any direction. When operating the switch, make sure that it is turned ON by tilting the lever approximately 30° or more.



If a shock of 0.49 G or greater is applied to the eject check switch, it may cause damage. Do not force the lever, such as by "twisting it" or "pulling it downward." Doing so may damage the eject check switch.

## [Setting related to operation]

For **A027XB-F02□3-P**, setting related to self operation is carried out by a dedicated writer (**ARW-02**).

The following are set:

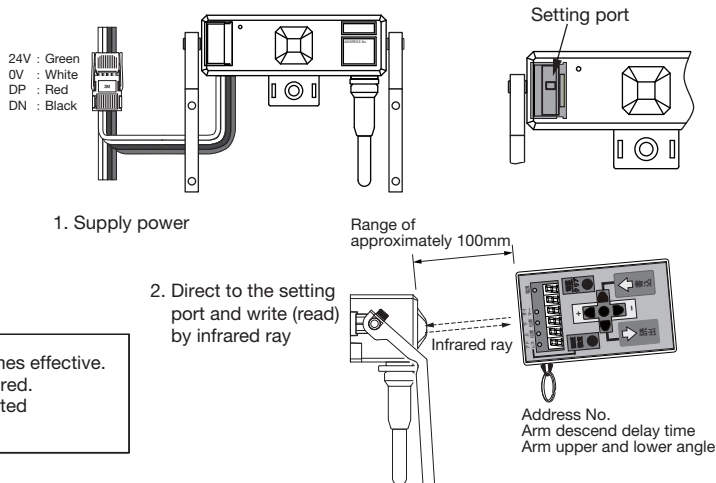
### -Address

### -Arm descend delay time

### -Arm upper and lower angle

Supply 24V and 0V DC, and write the set value from ARW-02 by infrared ray. (It is also possible to read.)

For how to operate ARW-02, refer to the ARW-02 product manual.



Upon completion of writing, the written address, etc., becomes effective. Make sure to turn OFF the output and write with safety ensured. When it is changed to any address in the ON state, unexpected operation such as opening of door may result.

## ■Address setting

- Address numbers are used to correspond to the I/O memory map of the controller.

### - Bit operation terminal

The numbers set with the address setting switch of the terminal corresponds to the addresses of the “eject indicator lamp (output)” and the “eject check switch (input),” respectively.

This terminal performs **word-by-word data verification and update**.

- You can set the address in a range from 0 to 255 on a point-by-point basis.
- The written address value is set as the same input and output address.

Example) When the address set value is “0”:

The input address is “0” and the output address is “0.”

- This unit is recognized as an “Input unit” by “Address automatic recognition” operation on the master side.

\* **There is no speed setting.**

\* **Set in such a manner so as not to exceed the maximum number of transmission points including the number of own terminals.**

## ■Arm descend delay time

When the eject indicator lamp turns on (output is ON), the arm interlocks inside and ascends, and when the lamp turns off (output is OFF), the arm automatically descends after a certain time. (It does not directly interlock with input of the eject check switch.)

This delay time until the arm descends can be selected from ten stages.

### [Operation]

Set value	Delay time C (sec)
0	0.7
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10

- ① The arm ascends at the same time as the eject indicator lamp is ON.
- ② When the eject indicator lamp is turned OFF, the delay timer starts to operate from that time point and the arm descends after the set time (delay time).  
If the eject indicator lamp is turned ON again before the set delay time passes, the delay timer is reset at the time point and the arm is also kept raised.
- ③ To use the eject indicator lamp with it flashing, set the eject indicator lamp as follows:

Time to keep the eject indicator lamp OFF < Set delay time

When turning OFF the eject indicator lamp by lever input and descending the arm, set as follows:

Time to keep the eject indicator lamp OFF > Set delay time

## ■Arm ascend angle

The arm ascend angle can be set in 7 stages up to approximately 180°.

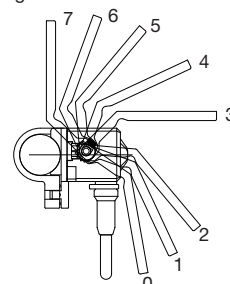
Adjustment can be made for any case where the door bumps into a shelf or work.

Write the No. of position where you want to stop the door approximately in the ARW-02 angle setting mode.

\* When using a broken-type corrugated plastic, do not set the No. of position where the corrugated plastic stops at an angle before the vertical position. When it is closed, the lower stage door plate may tightly fit and the corrugated plastic may not descend.

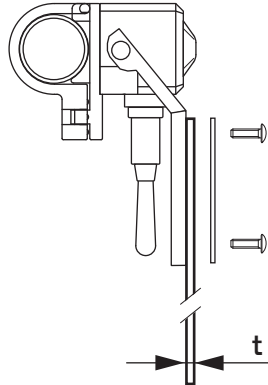
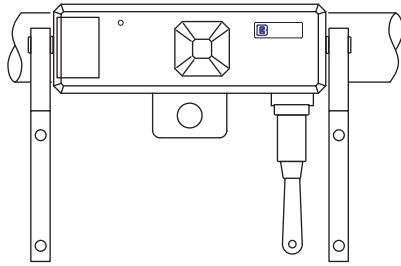


### ●Arm angle

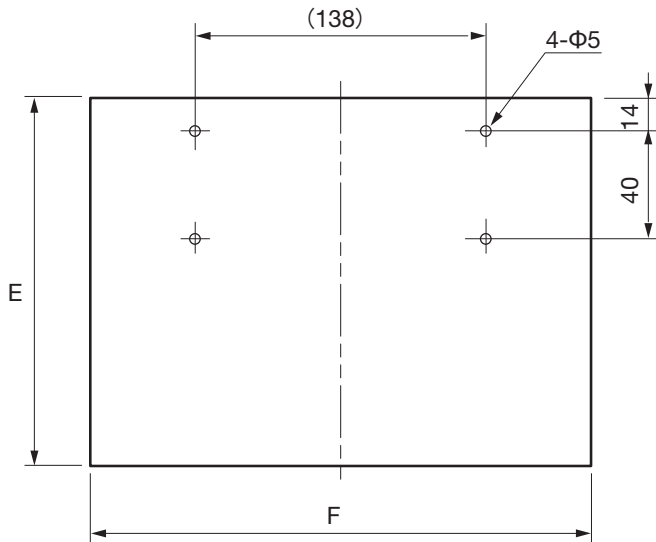


# [How to install the door]

When a plate is installed to the arm, it acts as a door to cover the parts shelf.  
 A lightweight material having strength such as corrugated plastic is suitable as the plate.  
 Examples of material and size driven for this terminal are shown.



M4 truss screw standard  
 tightening torque: 1.27N-m



■ Recommended material for door  
 Straight: Corrugated plastic of thickness 3mm  
 Density: 500g/m<sup>2</sup> or less

■ Allowable corrugated plastic dimension (Unit: mm)

	E	F	t
Straight	210	600	3
	250	400	
	300	300	
	360	200	

## [Reference]

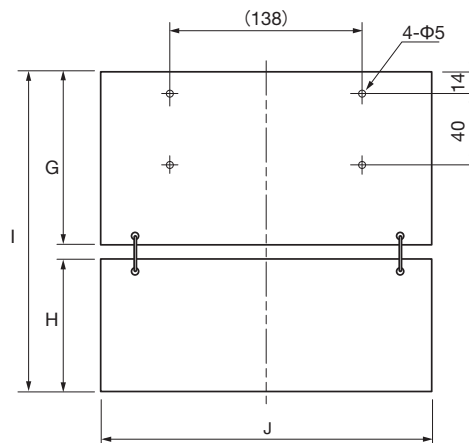
In case of broken-type door

■ Recommended material for door  
 Broken-type: Foamed plate of thickness 3mm  
 Density: 500g/mm<sup>2</sup> or less

■ Allowable corrugated plastic dimension (Unit: mm)

	G	H	I	J	t
Broken-type	120	120	260	600	3
	150	150	320	400	
	170	170	360	300	
	210	210	440	200	

\* Lightweight resin or the like is assumed to be used for the broken-type door hinge.



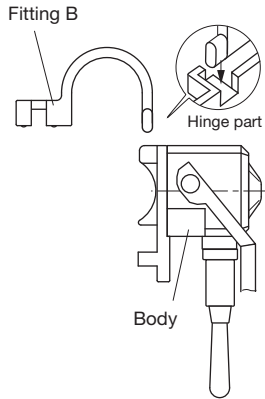
\* When using a broken-type corrugated plastic, do not set the No. of the position where the corrugated plastic stops at an angle before the vertical position. When it is closed, the lower stage door plate may tightly fit and the corrugated plastic may not descend.



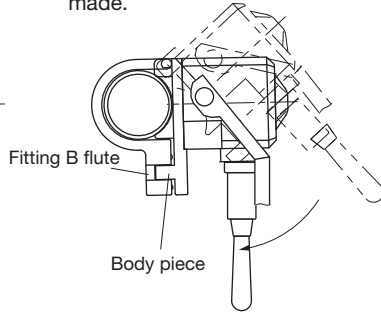


## [How to Mount Fittings on the Pipe]

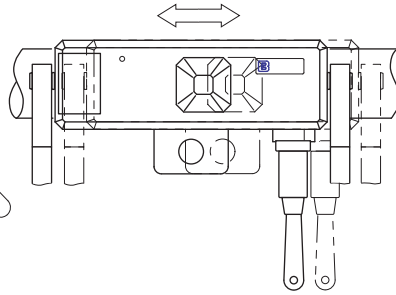
Hook the boss of fitting B onto the hinge part of the body.



Hook fitting B onto the pipe, and then pull the body to make the connection. When the body piece snaps into the flute of fitting B, a temporary fixing has been made.

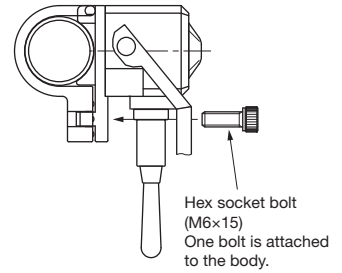


Slide the body to adjust the position.



Once the position has been determined, fasten fitting B to the pipe with the provided bolts.

M6 bolt fastening torque: 1.5 - 2 N-m



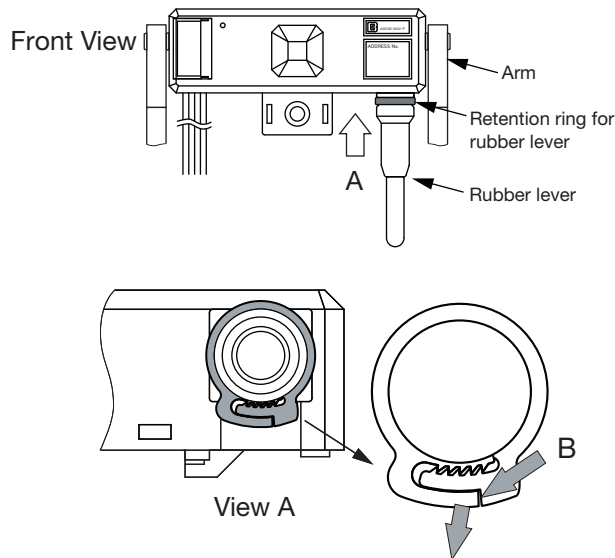
## [How to Replace the Lever]



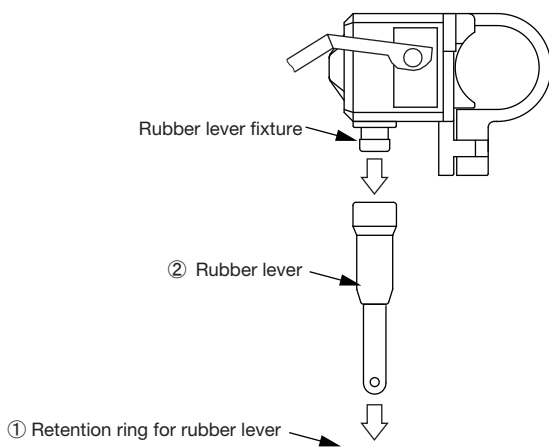
When replacing the rubber lever, remove the corrugated plastic and release the arm from the lever. When the retention ring for the rubber lever is removed and fitted, unnecessary force may be applied, resulting in failure.

### ■ Removal of Rubber Lever

- (1) Push the black part of the retention ring for the rubber lever in the direction of B and release the stopper fitting to loosen the ring.

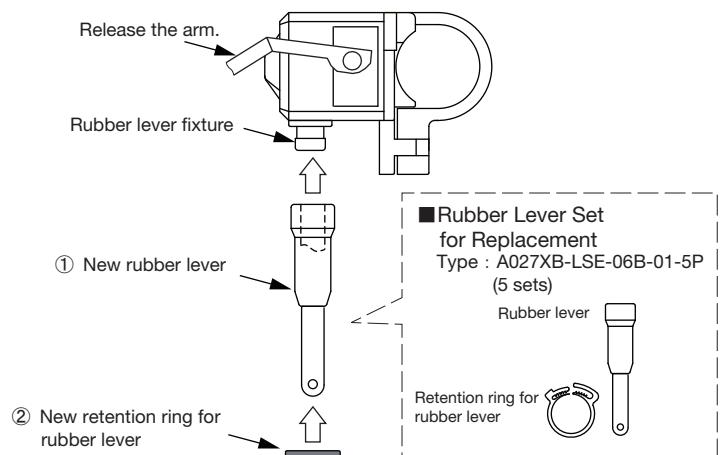


- (2) Remove the rubber lever from the rubber lever fixture in order (① → ②).

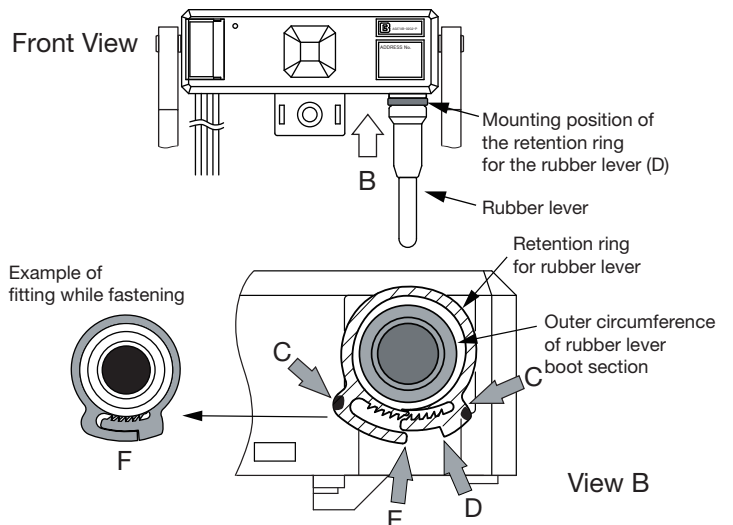


### ■ Mounting the Rubber Lever

- (1) Ensure that a rubber lever fixture has been pushed completely into the boot section and place the retention ring over the rubber lever. Use a new retention ring for the rubber lever.



- (2) Mount the retention ring for the rubber lever to the (D) position (Rubber lever boot section) in the front view. Fasten the outer circumference of the rubber lever boot section after pushing the black mark part in the direction of C with pliers, etc., and matching the stopper piece until D and E contact each other (Refer to F). After fastening, pull the lever and ensure that the lever is securely fixed.



## [Specifications]

Item	Specification
Rated power supply voltage	24V DC (Power supply from AnyWire Master unit.)
Allowable power voltage range	21.6V DC - 27.6V (24V DC +15% - -10%) Ripple 0.5Vp-p
Ambient temperature use	0 - +55°C
Ambient humidity use	35 - 85%RH No condensation
Temperature/humidity storage	-20 - +70°C/35 - 95%RH
Atmosphere	No corrosive gas
Transmission method	DC power supply superimposed total frame/cyclic method
Synchronization method	Frame/bit synchronization method
Transmission procedure	Dedicated protocol (AnyWire Bus)
Transmission clock	27.8kHz (when using AB023-□)
Transmission cycle time	Approx. 5.5ms (when setting input 128 points, output 128 points) Note) Transmission delay time is 1 cycle to 2 cycle time.
Connection mode	Bus type (Multi-drop method, T-branch method, Tree branch method) 4-wire power batch supply method
Address setting range	0 - 255
Number of connection points	Up to 64 units (Connect to A027XB-F02□3-P only) *When this product is used in combination with A027XB-02□2-P, a total of 64 units or less should be used.
Transmission distance	Up to 100 m (When using 0.75 mm <sup>2</sup> our flat cable)
Number of simultaneously output on points (Number of units)	32 points (including eject indicator lamp light-up, arm ascend/descend operation)
Number of occupied data items	Input 1 bit/output 1 bit
Damage prevention function	Operation stops after approximately 6 seconds when external stress is applied to the door.

## [Power Consumption/Mass]

Type	Power Consumption	Mass
A027XB-F02□3-P	During standby : 19mA During operation : 522mA**	240g

\*\*: This is the peak current when the eject indicator lamp lights up and the arm is ascending or descending.

### ■ Basic type (Power supply to the entire system)

Connect the 24V DC line of A027XB-F02□3-P to the power supply of the **AnyWire** Master.

### ■ When increasing the number of units to simultaneously turn output ON

Supply the local power supply to A027XB-F02□3-P.

In this case, use 0V for the master power supply and local power supply commonly.

### ■ Power capacity (Power supply to the entire system)

$[(19mA \times M) + (522mA \times N)] \times 1.3$

M: Number of terminal units in standby state

N: Number of units to be simultaneously turned output ON (32 units or less)

### ■ Power capacity (Local power supply)

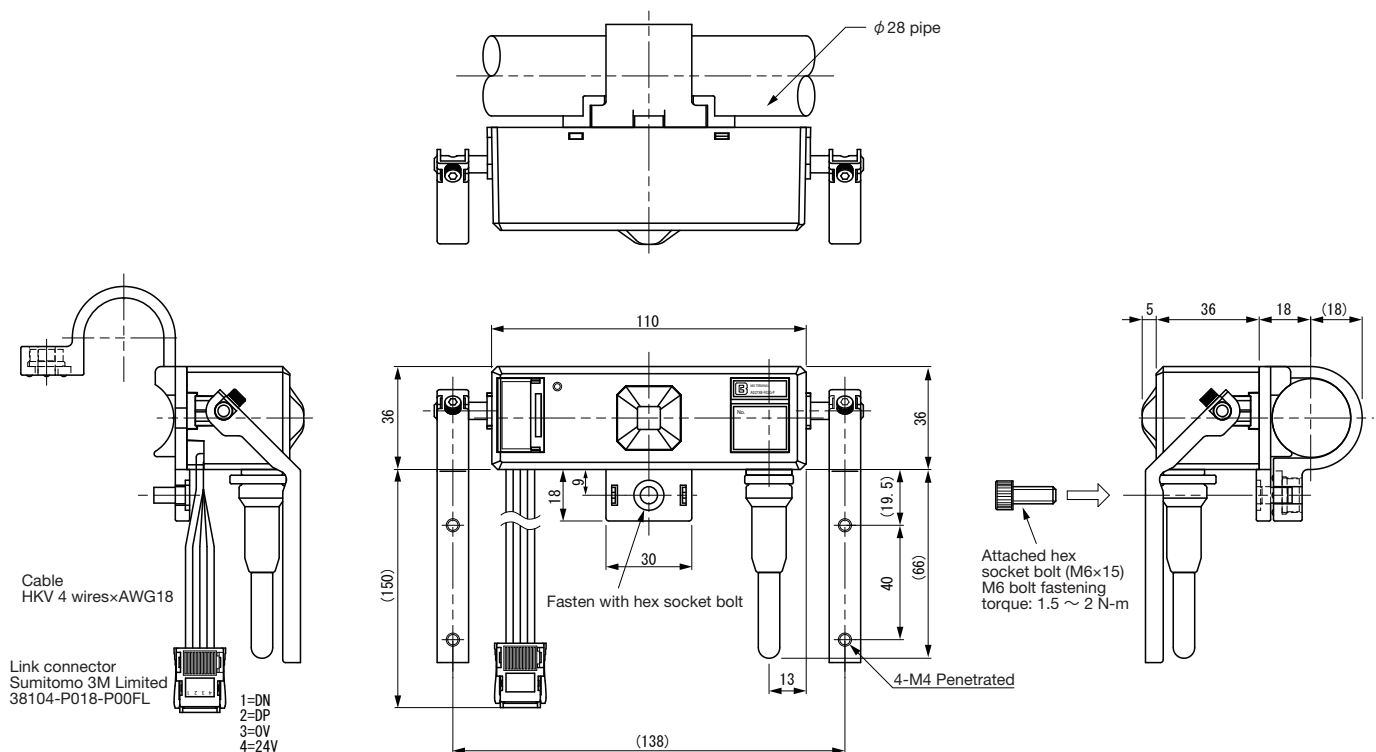
$[(19mA \times M) + (522mA \times N)] \times 1.3$

M: Number of terminal units in standby state

N: Number of units to be simultaneously turned output ON

## [Outer Dimension Drawings]

Unit : mm



## [Address]

**Anywire** Anywire Corporation

### Headquarters:

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