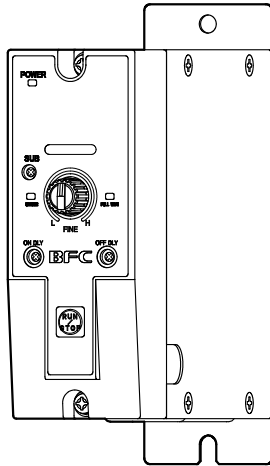


## Instruction Manual



Thank you for purchasing BFC Atsuden Feeder Controller.  
To ensure the right usage please read this manual carefully before using.  
Also please deliver this manual to the end user.

### 1. Before Using

#### Vibrator

Be sure to use BFC Atsuden Feeder (PB, PL Series) for this controller.  
※This feeder controller cannot be used for any piezoelectric feeder or electromagnetic feeder of other make.

### 2. Precautions

○ This instruction manual classifies the danger into "DANGER", "WARNING" and "CAUTION" according to the degrees of danger and its adverse effect.

DANGER ⚠	<ul style="list-style-type: none"> <li>Indicates a case where danger is expected clearly. Improper treatment against this indication could cause death or serious injury.</li> </ul>
WARNING ⚠	<ul style="list-style-type: none"> <li>Indicates a case where danger is expected depending on the situation. Improper treatment against this indication could cause death or serious injury.</li> </ul>
CAUTION ⚠	<ul style="list-style-type: none"> <li>Indicates a case where danger is expected depending on the situation. Improper treatment against this indication could cause light or moderate injury.</li> </ul>

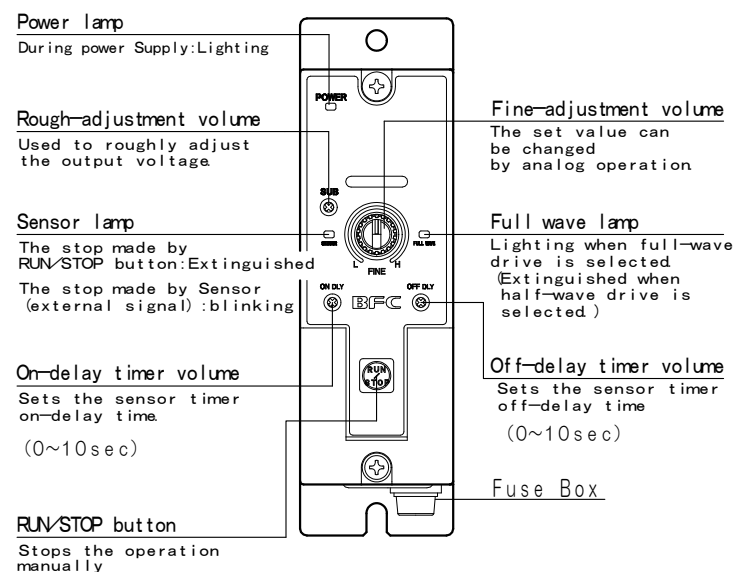
○ It should be noted that the cases of "DANGER", "WARNING" and "CAUTION" in the following Precautions do not cover any and all cases. Read the brochure and the instruction manual carefully and work on the basis of safety-first.

DANGER ⚠	<ul style="list-style-type: none"> <li>Do not work with this feeder controller in the live status or you could have an electric shock.</li> <li>Do not use this feeder controller in any place where there is a dangerous material (e.g. ignitable material, inflammable material). ※This feeder controller is not of explosion-proof type.</li> <li>When it is installed at a high place since this feeder controller could drop or topple down under some conditions take preventive measures against dropping or toppling down. Also when installing this feeder controller, be sure to hold and lock it firmly.</li> <li>Do not splash water on this feeder control, wash it or use it in the water, or injury, electric shock or fire could be caused due to the abnormal behavior of this feeder controller.</li> </ul>
-------------	---

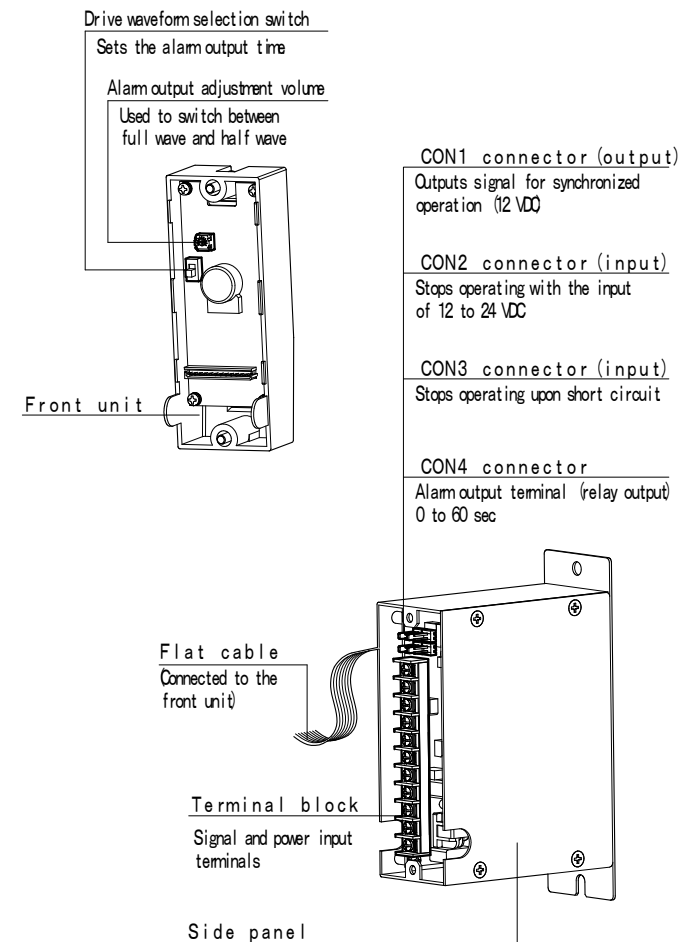
WARNING ⚠	<ul style="list-style-type: none"> <li>When removing the cover, turn OFF the input power source beforehand.</li> <li>When wiring this feeder controller, be sure to turn OFF the input power source beforehand or you could have an electric shock.</li> <li>Do not attach or detach any connector or apply unnecessary force to any connector in the live status or this feeder controller could be broken down or you could have an electric shock.</li> <li>Do not ride on this feeder controller or put an object on it or the feeder controller could topple down or drop you could have a falling accident or this feeder controller could be broken down.</li> <li>Do not damage the lead wire or fire or electric shock could be caused by earth leakage.</li> <li>Connect an earth wire to this feeder before using.</li> <li>Do not use this feeder controller outside the scope of the specifications or this feeder could be failed, broken down or short-lived significantly.</li> <li>Do not retrofit this feeder, or using this feeder with retrofitting could cause failure or breakage to this feeder controller. ※Any failure of this feeder controller due to your retrofitting is outside the scope of warranty regardless of reason for such retrofitting.</li> <li>Wire this feeder controller properly in accordance with the instruction manual. Before turning ON the power source reconfirm no error in the wire connection. ※Improper wiring could cause breakdown or abnormal behavior to this feeder controller.</li> </ul>
CAUTION ⚠	<ul style="list-style-type: none"> <li>Do not install this feeder controller in any dusty place since it is not of explosion-proof type.</li> <li>Secure a maintenance work space in the installation site for this feeder controller. If daily inspection or maintenance cannot be performed this feeder controller could be broken down.</li> <li>When welding the bowl or chute, be sure to disconnect this feeder controller and ground the bowl or chute firmly beforehand or the feeder controller could be broken down due to leak current.</li> <li>When carrying this feeder controller, be sure not to hitch up the main unit with the cord but to hold the main unit, or disconnection or intermittent connection could be caused to the cord.</li> <li>Never start/stop the vibrator by turning ON/OFF the power source by means of an electromagnetic switch or the like on the power input/output side or this feeder controller could be failed or broken down. ※When the vibrator has to be started/stopped frequently, confirm the external control system in accordance with the instruction manual and operate it properly.</li> <li>Do not install this feeder controller at any hot and humid place but at a well-ventilated place.</li> <li>Use this feeder controller at ambient temperatures ranging from 0 to 40°C.</li> <li>Do not peel off the nameplate, the seal or the like.</li> <li>When it is no longer necessary, waste this feeder controller as an industrial waste through the legitimate waste disposal.</li> </ul>

### 3. Name and Function of Each Part

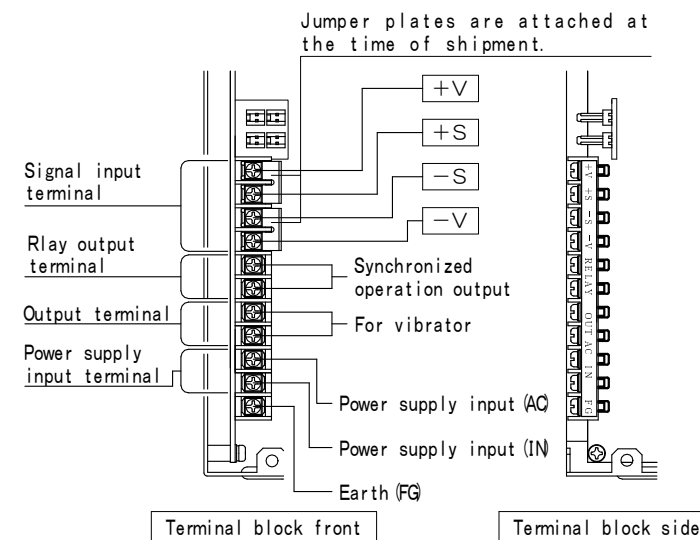
#### 3-1 Operation panel



#### 3-2 Inside



#### 3-3 Terminal block

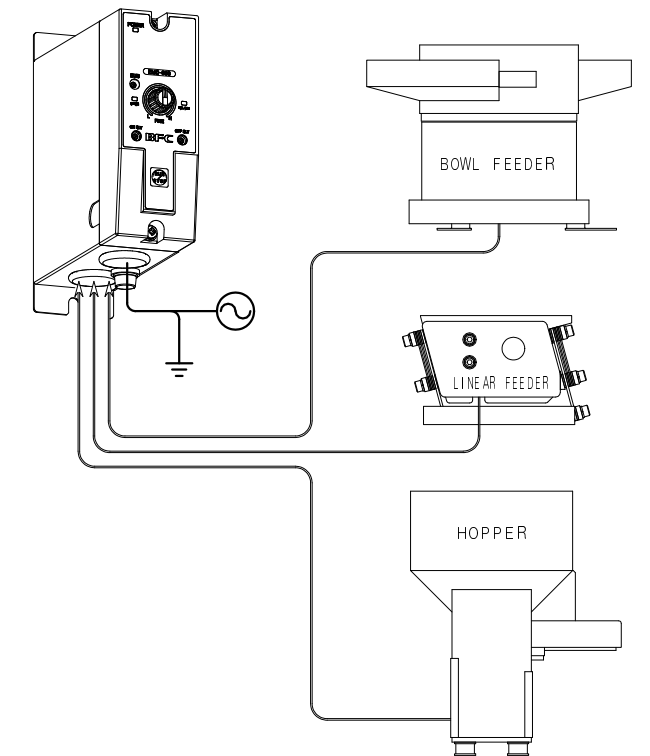


### 4. Wiring

#### 4-1 Connection with the vibrator

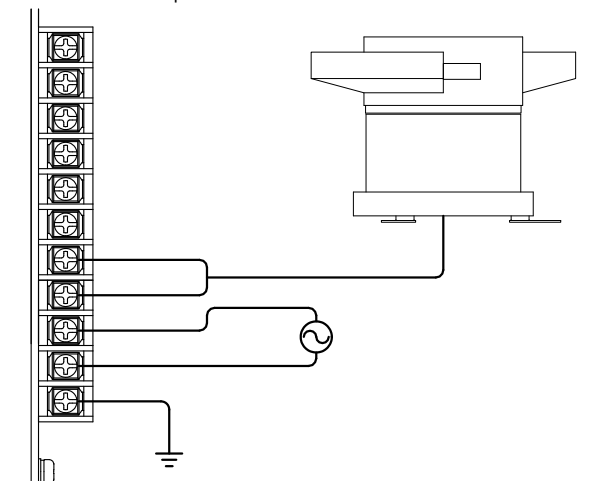
Connect the electromagnetic feeder to the output terminal of this feeder controller.

\* Be sure to connect one electromagnetic feeder to one feeder controller.



#### 4-2 Connection of the input/output line

Remove the front unit from this feeder controller.  
Connect the power source to the power source input terminal on the terminal block and connect the vibrator to the output terminal.



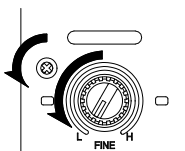
WARNING ⚠	<ul style="list-style-type: none"> <li>When removing the front unit, turn OFF the input power source.</li> <li>Be sure to connect the earth wire to the terminal "E".</li> </ul>
--------------	--

## 5. Preparation

- After checking a drive waveform check the setting of the waveform selection switch located on the back side of the front unit.
- If the drive waveform is different from the waveform you use, change the switch setting.
- Recheck whether the wiring is correct, and install the front unit.

**WARNING** When installing the front unit, do not pinch or forcibly thrust in the flat cable.

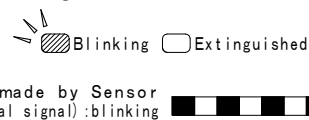
- Turn the rough-adjustment and fine-adjustment volumes to the 0 position (left limit).



- Turn ON the power supply.

A lamp of a power supply lights up.

The sensor lamp will be in the state of the following 2 modes-

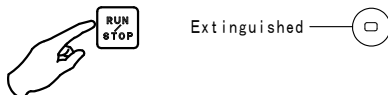


The stop made by Sensor (external signal):blinking

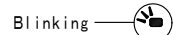
The stop made by RUN/STOP button:Extinguished

## 6. Giving It a Trial

- When the Sensor lamp is blinking fast, press the RUN/STOP button to light up the operation lamp. (Output comes out of the output cable.)

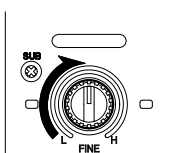


When the Sensor lamp is blinking, input the external signal. → Section 7

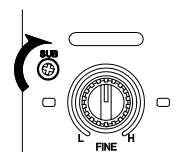


(Output comes out of the output cable.)

- Set the fine-adjustment volume to around 50%



- Adjust the rough adjustment volume using a precision screwdriver.



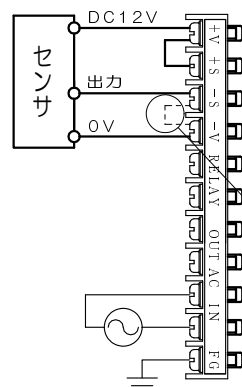
- Turn the rough-adjustment volume and then fine-adjustment volume to the right, and repeat this until you obtain the appropriate vibration.

- If you cannot increase the vibration even after you turn the rough-adjustment and fine-adjustment volumes to the right limit, adjust the flat spring of the vibrator.

(For details of the flat spring adjustment method, see the vibrator's instruction manual.)

## 7. Connection with External Equipment

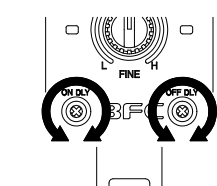
### 7-1 Control with sensor



- Connection with the sensor  
Connect the sensor with the signal input terminal.
  - Remove jumper plates between [S] and [OV] of this feeder controller.
  - Connect the [24VDC] terminal of the sensor with the [OV] terminal of this feeder controller.
  - Connect the [OUT] terminal of the sensor with the [S] terminal of this feeder controller.
  - Connect the [0V] terminal of the sensor with the [OV] terminal of this feeder controller.

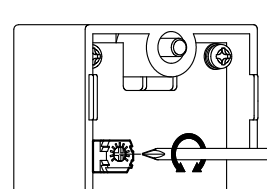
Remove the jumper plate.

- Adjust the sensor output to be ON upon the entrance of light.



- Setting the on/off-delay time  
Use a precision screwdriver or the like.

Adjust it to the appropriate on-delay time. In the same way, turn the off-delay timer volume and adjust the off-delay time. (0-10 sec)

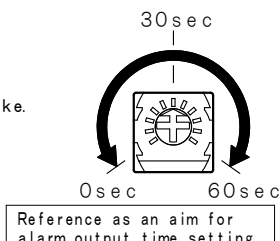


- Setting the alarm output time (when the alarm output is used)  
The alarm output adjustment volume is located on the rear side of the front unit.

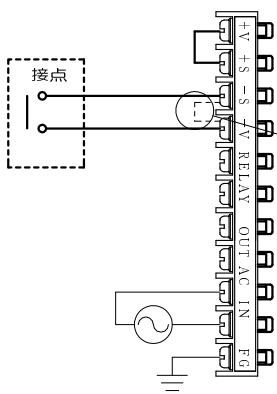
Use a precision screwdriver or the like.

(0-60 sec)

**WARNING** Before opening the front unit, turn OFF the input power source.



### 7-2 Control with contact signal

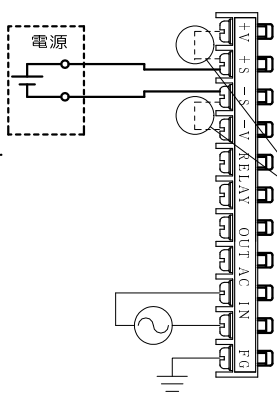


Remove jumper plates between [S] terminal [OV] and terminal and connect the contact.

Remove the jumper plate.

Contact OFF: Feeder at a stop  
Contact ON: Feeder in operation

### 7-3 Control with voltage signal



Connect the + side of the external voltage with the [OV] terminal of this feeder controller.

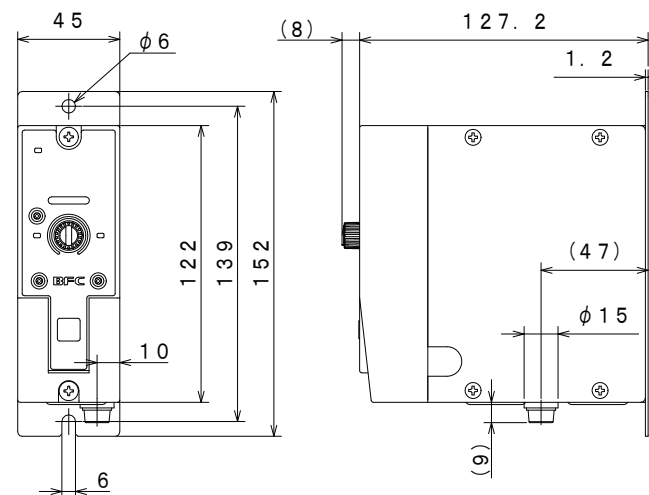
Connect the - side of the external voltage with the [S] terminal of this feeder controller.

Remove all jumper plates.

Voltage not applied: Feeder at a stop  
Voltage applied: Feeder in operation

Operation lamp	Operation state	External signal	RUN/STOP button
Lighting	In operation	Operation signal	Run operation
High speed Blinking	At a stop	Stop signal	Stop operation
Low speed Blinking		Stop signal	

## 8. Outside Dimensions



## 9. Specifications

Model		EMC-003
Input	Voltage	85 - 265VAC
	Frequency	50Hz/60Hz
	Number of phases	1
Output	Max. current	3A
	Voltage	Full-wave: 220V / Half-wave: 180V
	Frequency	50Hz/60Hz
	Sync signal output	12VDC 50mA
	Alarm	Contact (relay) 1A 0-60 sec
	Sensor connection	12VDC 100mA
On-delay time		0-10 sec
Off-delay time		0-10 sec
External control method		Voltage (12-24VDC) / Contact
Operating ambient temperature		0-40°C (No ice formation)
Operating ambient humidity		10-90%RH (No condensation)
Coating color		BN-75 (Japan Printing Contractors Association)
Main body mass		0.6Kg

## 10. Troubleshooting

Problem	Checking point	Reference
A. When the power supply is turned ON the display, the lamp, etc. do not light up.	Is the power supply input cable connected correctly?	4-3
	Does the fuse work properly?	3-1
B. Although the operation lamp is lighting, there is no vibration.	Is the output cable connected correctly?	4-1
C. Although the operation lamp is extinguished, there is no vibration.	Press the RUN/STOP button to activate the operation.	6-2
D. Although the operation lamp is blinking, there is no vibration.	Input the external operation signal.	7
E. Although the voltage is increased, vibration remains unchanged.	Is the frequency adjustment appropriate?	6-3
	Isn't the bowl outside the specification range used?	Instruction manual of vibrator
F. Vibration varies.	Is the frequency adjustment appropriate?	6-3
	Isn't the bowl mounted firmly? Isn't there interference with peripheral equipment?	Instruction manual of vibrator
G. Abnormal noise is emitted from the controller.	Contact us.	
H. Abnormal odor is emitted from the controller.	Contact us.	

## 11. Options

CON1, 2, 3, 4 output cords are optional.

Specify as "Attached with CON. cord X (Quantity)" when placing an order for this feeder controller.

## 12. Warranty

- The warranty period shall be 12 months from the date of delivery (provided that the feeder controller is operated 8 hours a day)
- In any of the following cases, the warranty shall not be applied:
  - The feeder controller was disassembled or retrofitted by the user. Any period shall be 12 months from the date of delivery
  - The feeder controller was broken apparently by improper usage.
  - The feeder controller was broken by force majeure (e.g., fire, earthquake, flood).
  - The feeder controller was broken by using against the using conditions, using method or precautions specified in the instruction manual.
- Repair with payment shall be fixed through deliberations with us, and the repair charge shall be invoiced by us.

**BFC** Feeding systems BFC Limited Sales Division

Head Office: Tel: +81-567-56-2550 Fax: +81-567-56-2552

103-1 Nishiume, aza, Umenogo, tobishima-mura, Ama-gun, Aichi 490-1435 Japan

Osaka Office: Tel: +81-6-4806-4777 Fax: +81-6-4806-4778

Hanabara 2nd Bldg. 702, 4-11-27 Nishinakajima Yodogawaku, Osaka, 532-0011 Japan

**BFC Applications, Ltd.** Feeding systems & applications BFC Applications, Ltd.

Tokyo Office: Tel: +81-3-5905-7160 Fax: +81-5905-7161

MB1F, 3-42-8, Higashioizumi, Nerima-ku, Tokyo 178-0063 Japan

※ This manual is subject to change for upgrading.