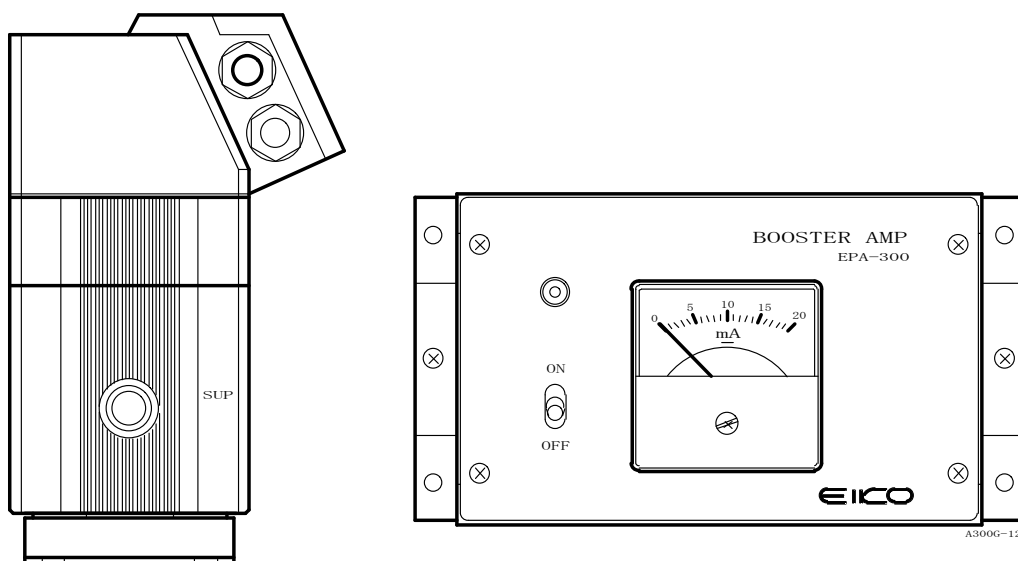


INSTRUCTION MANUAL

* ELECTRONIC REGULATOR *

Model : EP-500
EPA-300
(BOOSTER AMP)



EIKO

EIKO SOKKI CO., LTD.

ISSUED: MAR.2004.

***** INSTRUCTION MANUAL *****

ELECTRONIC REGULATOR Model : EP-500
BOOSTER AMP Model : EPA-300

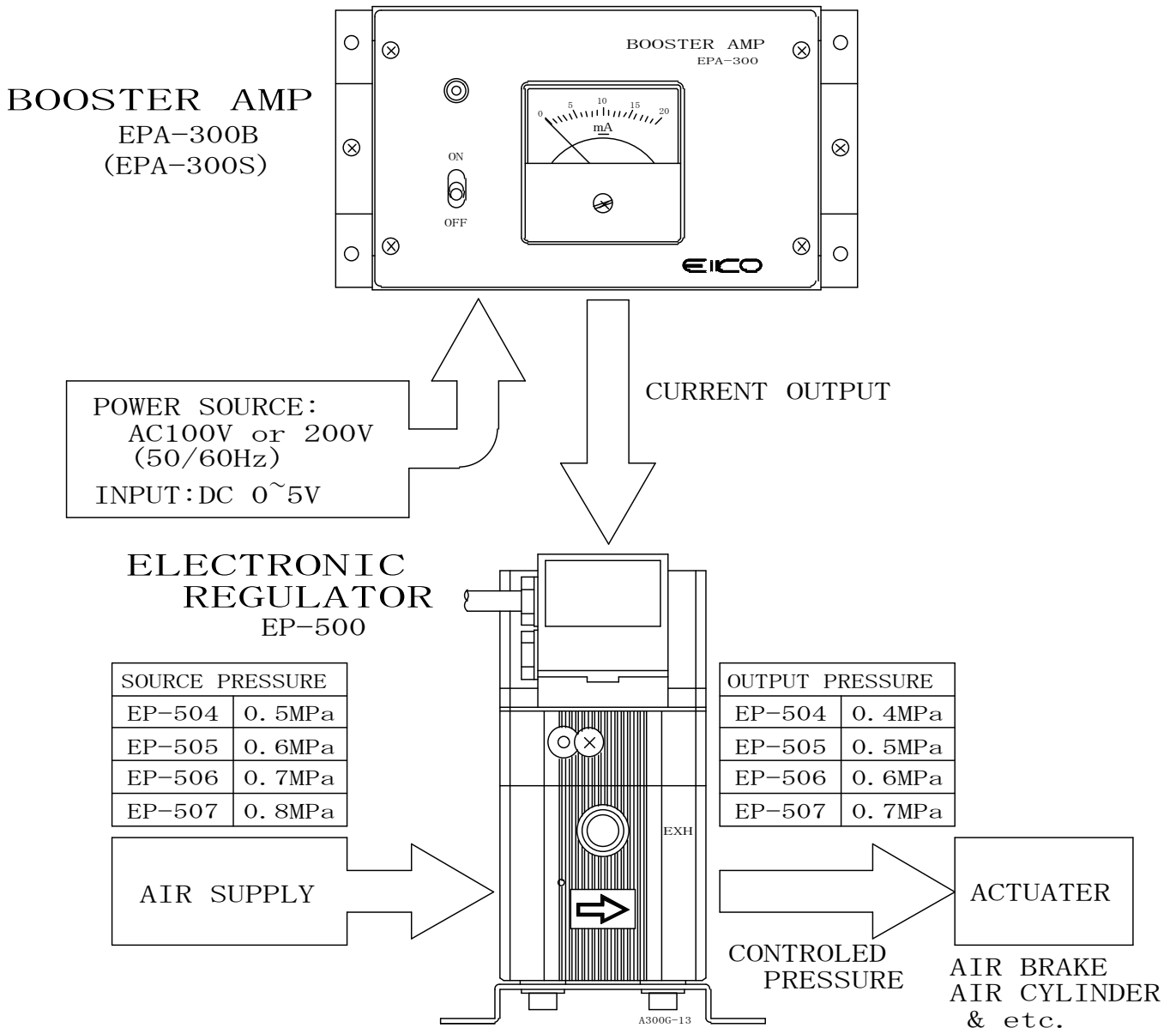
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1

COMPOSITION

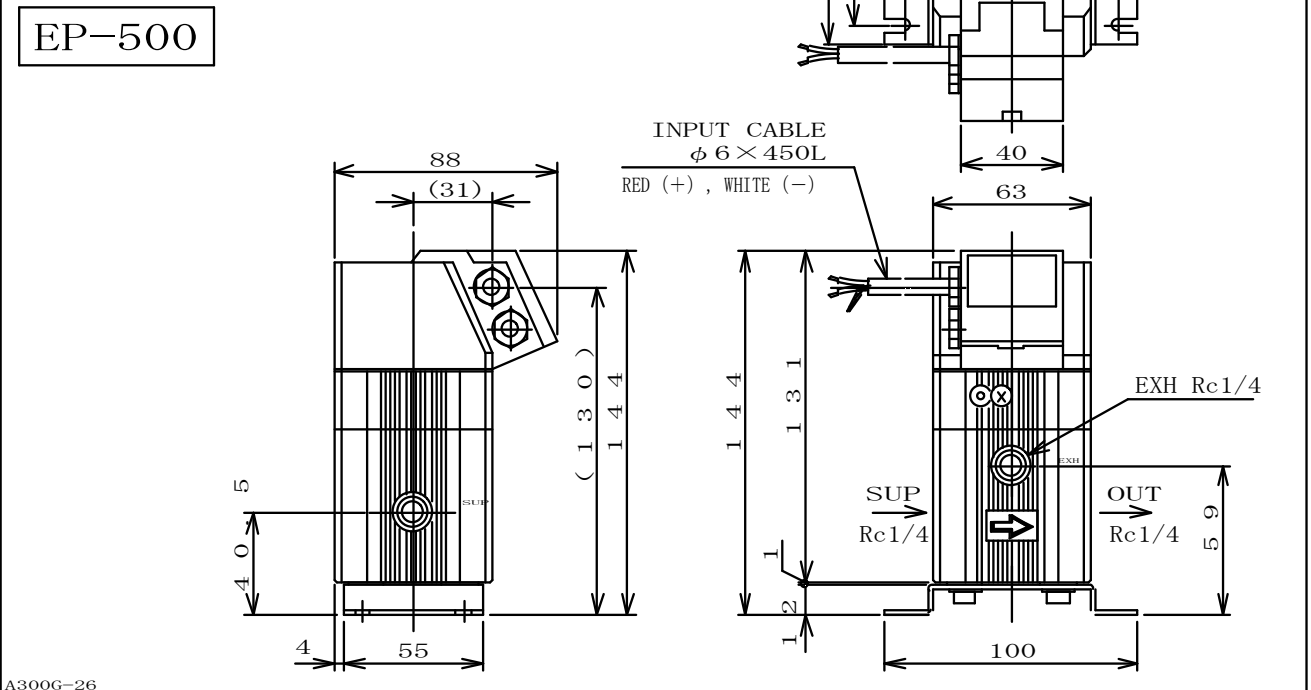
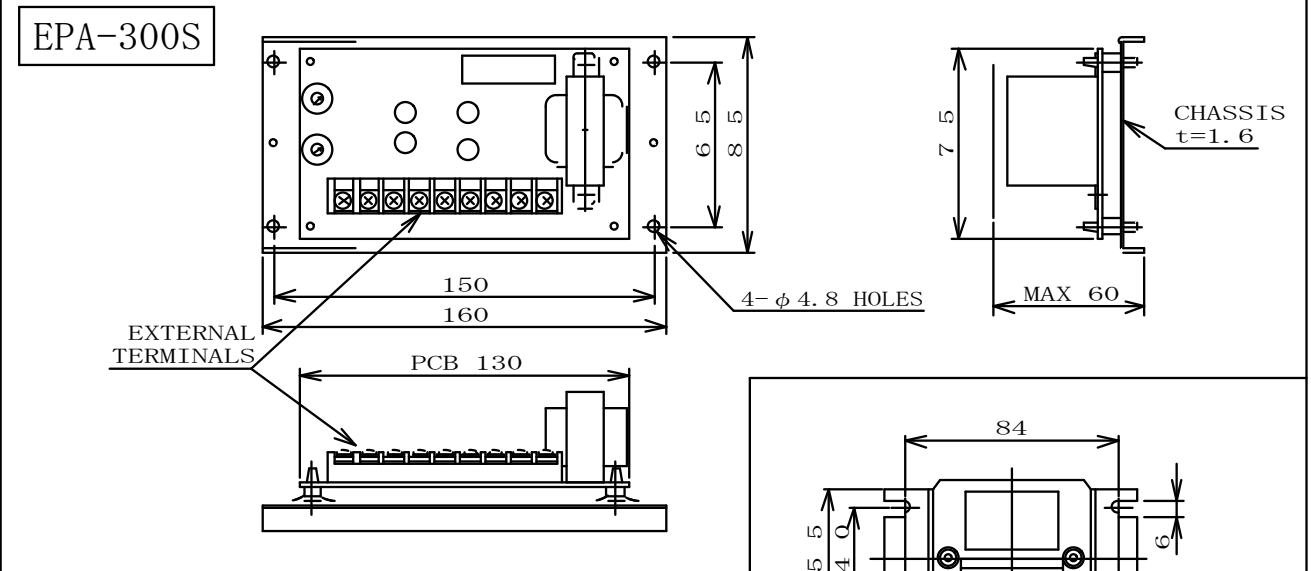
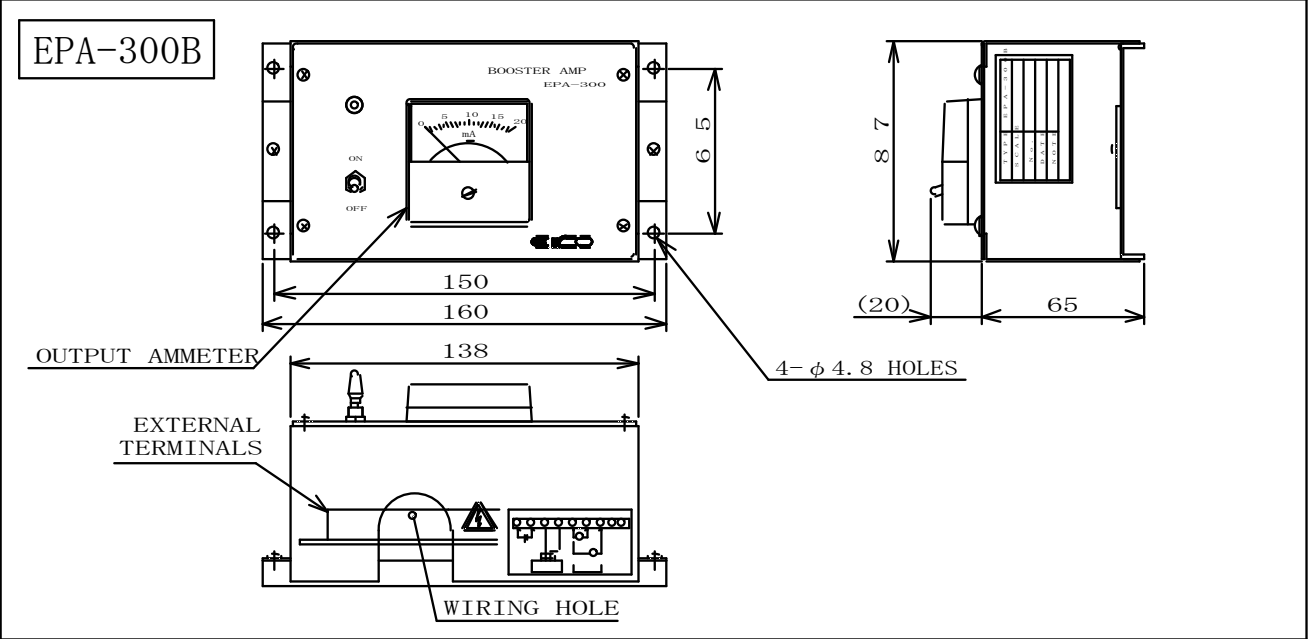
This unit is composed of the ELECTRONIC REGULATOR and the BOOSTER AMP. The unit is able to gain the output of pneumatic pressure in proportion as input voltage.



BOOSTER AMP	MODEL	EPA-300B (BOX TYPE)	EPA-300S (CHASSIS TYPE)
	Power source	AC 100V or AC 200V (50 / 60 Hz)	
	Input	DC0~5V	
	Output	DC4~20mA	
	Output ammeter	Attached	Unattached

ELECTRONIC REGULATOR	MODEL	EP-504	EP-505	EP-506	EP-507	
	Adaptable fluid	Clean compressed air (See clause 4 in 6p.)				
	Supply pressure	0.5MPa -0,+ 0.1MPa	0.6MPa -0,+ 0.1MPa	0.7MPa -0,+ 0.1MPa	0.8MPa -0,+ 0.1MPa	
	Control pressure range	0.005~ 0.4MPa	0.005~ 0.5MPa	0.005~ 0.6MPa	0.005~ 0.7MPa	
	Linearity	±1.0%FS	±0.85%FS	±0.7%FS	±0.7%FS	
	Hysteresis	2.0%FS	1.7%FS	1.4%FS	1.4%FS	
	Input signal	Input current range	DC4~20mA			
		Input impedance	500 Ω or less			
	Maximum flow rate	2000 □/ min (ANR)				
	Air consumption	3 □/ min (ANR)				
	Step response time	Less than 2sec (Non-load, F.S.)				
	Temperature	5~50°C				
	Characteristic of parashock	Less than 39 m/s ² (4G)				
	Connection pipe size	Rc 1/4				
	Weight	0.9kg				

DIMENSION

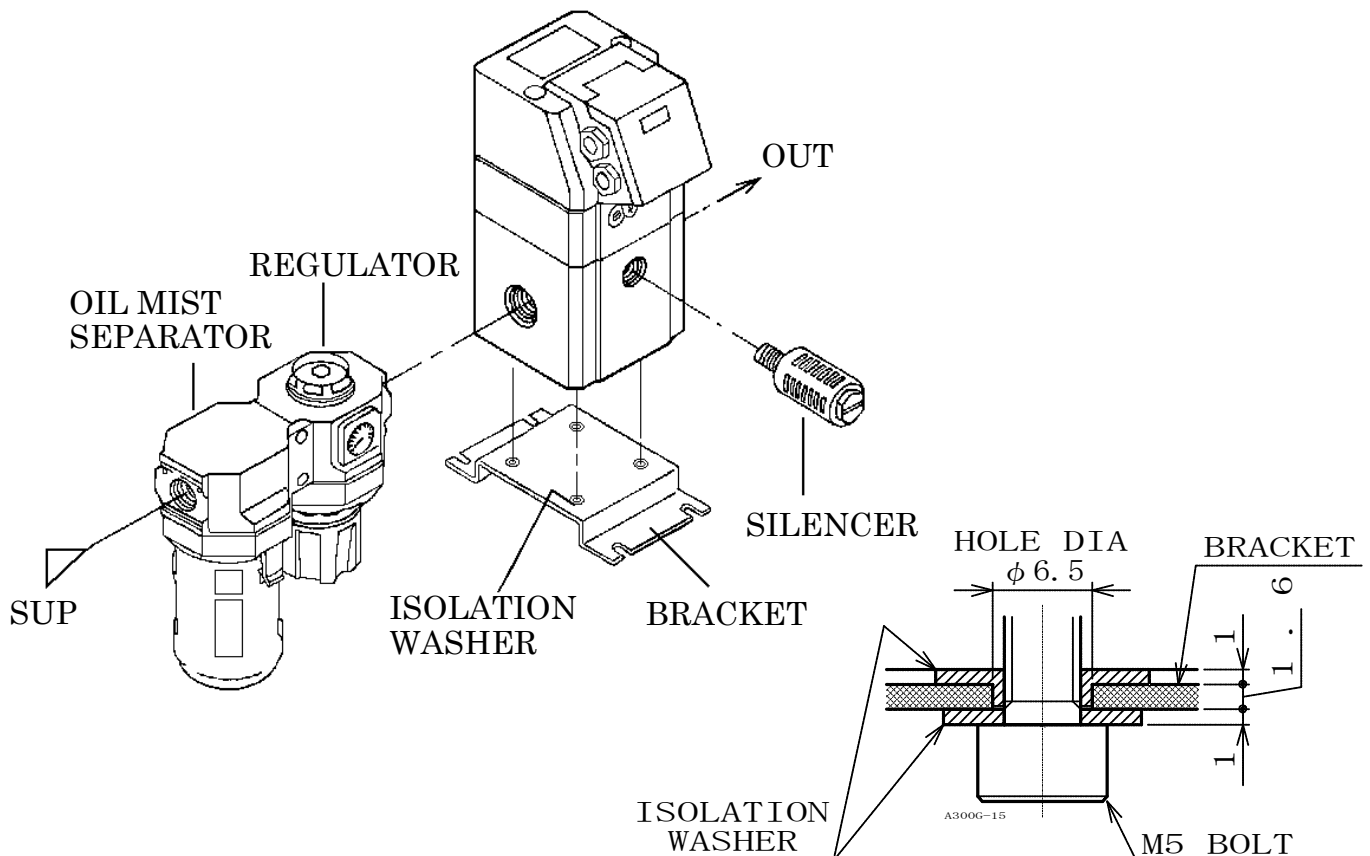


(1) INSTALLATION FOR THE BOOSTER AMP

Mounting attitude is free, but it is necessary to select environment of less vibration, non-exposure to the sun, non-drop of water, non-dust and uncorrosion-gas. It is necessary to mount EPA-300S (chassis type) into a control box.

(2) INSTALLATION FOR THE ELECTRONIC REGULATOR

- * There are no strict restrictions in mounting attitude.
Install the product vertically with its resin cover on top where wiring and adjustments are easily accessible.
- * The product must be used in isolation.
If when isolate condition getting poor, sometimes the cause of the instability control.
The isolation washer assembled always.
- * In case of unsusing the attached bracket or using another bracket, please use isolation washers always.
Otherwise non-isolation is the cause of the instability control.
- * Please don't use a metallic pipe for the isolation.

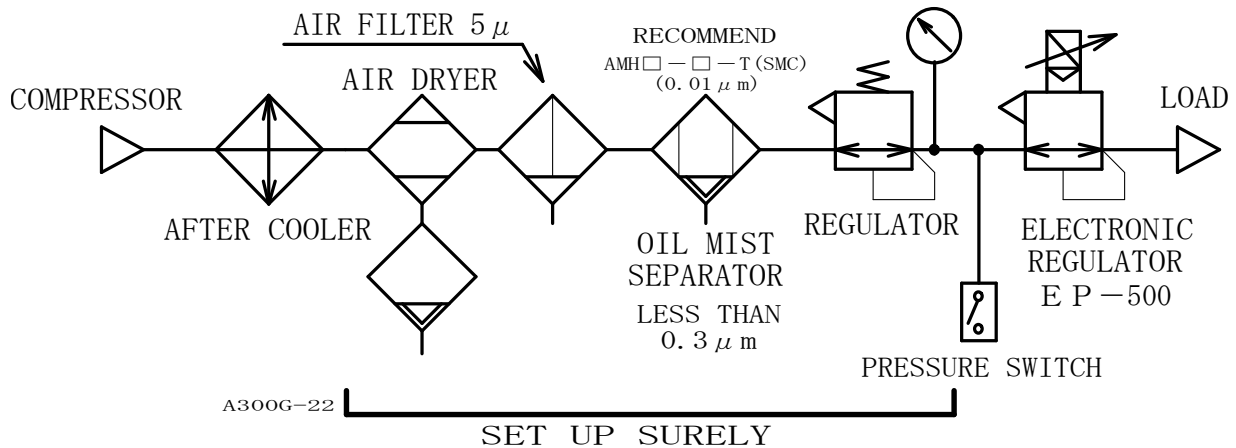


(1) SUPPLY AIR

The ELECTRONIC REGULATOR uses precision parts and electronic circuits contaminated air may causes deterioration in its performance and durability.

The supply air must be clean air removed particles, moisture and oil mist by air filter & oil mist separator always.

Adjust the supply pressure with a general manual regulator to secure uniform performance.



Recommendable pneumatic circuit

(2) LOAD LUBRICATION

When the load devices need to lubricated, install lubricator at the stage after the Electronic Regulator.

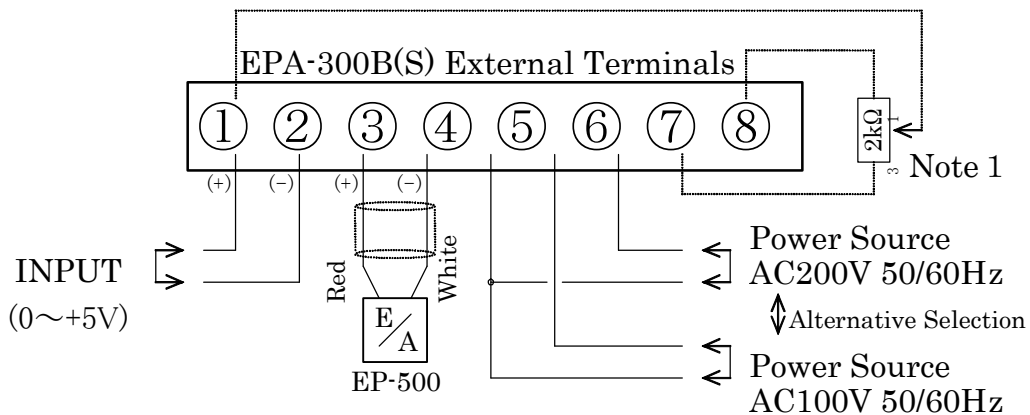
(3) EXHAUST

Install a silencer to the exhaust port (EXH).

When the exhaust should not be released into the environment such as in a clean room install pipes leading to the external environment.

- * Please do not connect a metallic pipe directly for the isolation.
- * Use pipe materials such as zinc plated steel and nylon etc. which do not corrode for pre-piping from the electronic regulator.
- * Please select piping material with an internal diameter sufficient for the flow load.
- * Please do not use excess sealing materials (sealing tape, jelly-type sealing material) and be careful not to let those enter inside the pipe as well as not leak to the outside.
- * Before connecting the electronic regulator, sufficiently flush the piping (three minutes or more with the pressure of over 0.3MPa, to remove dust, metal powder, sealing materials and rust).

(1) CONNECTING TO THE BOOSTER AMP

BOOSTER AMP connection figure

- Note 1 : In case of very the pressure manually, above figure shown a dotted line.
The No.2 terminal of VR's connect to No.① terminal of booster in case of use a external VR, please do not connect input signal and empty No.②.
- Note 2 : Please use a shielded wire to connect the electronic regulator.

(2) CONNECTING TO THE ELECTRONIC REGULATOR

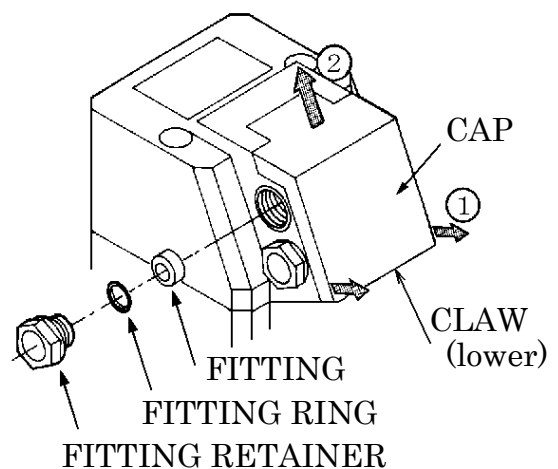
The ELECTRONIC REGULATOR has input cable with about 0.45m length in case of extend the cable, please connect 2-wires shielded cable 0.5 ~ 1.5mm², and extensible length is less than 30m.

☆ Direct connection

1) Opening the terminal box

To open the terminal box cap,

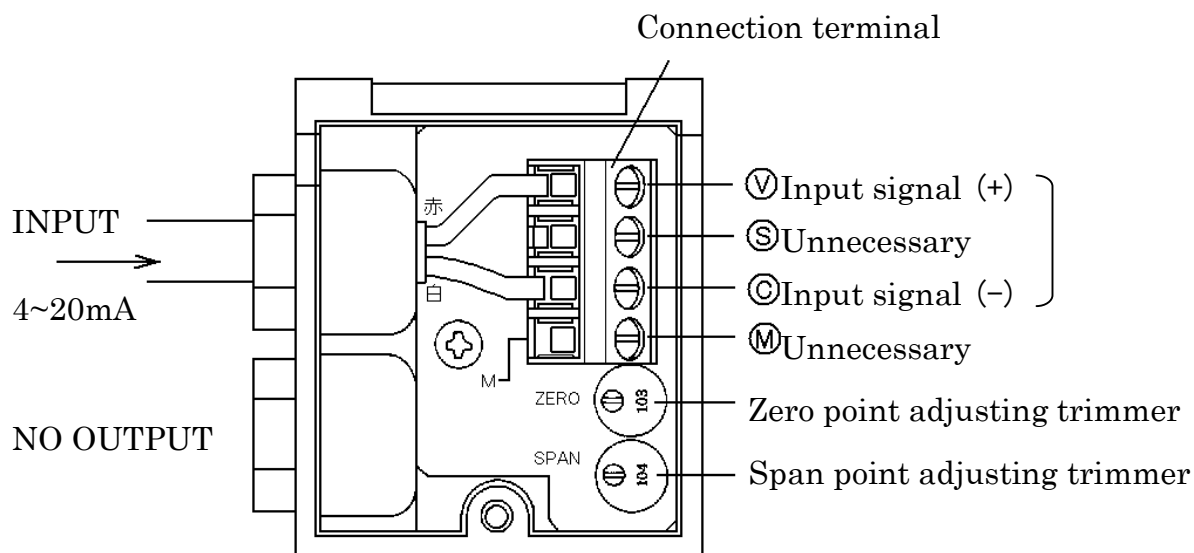
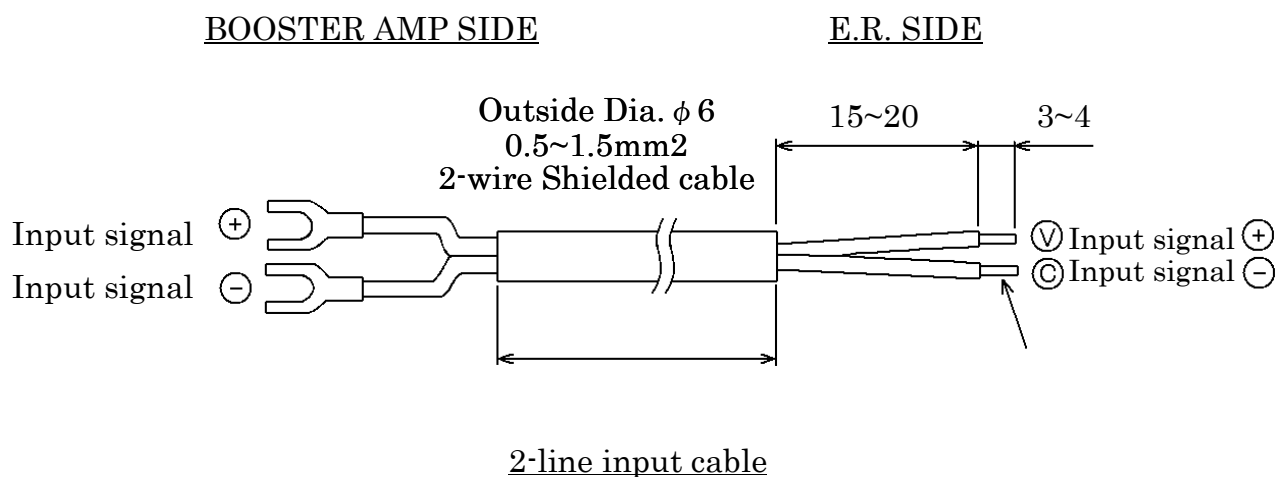
- ① pull the cap lower part until the lower claw disengages, and
- ② push the entire cap diagonally upward.



2) Connection

Please use the $\phi 6$ mm outside diameter, 2-wires shielded cable $0.5\sim 1.5\text{mm}^2$.

Please strip the shielded cover of both shielded cable end and cover its.

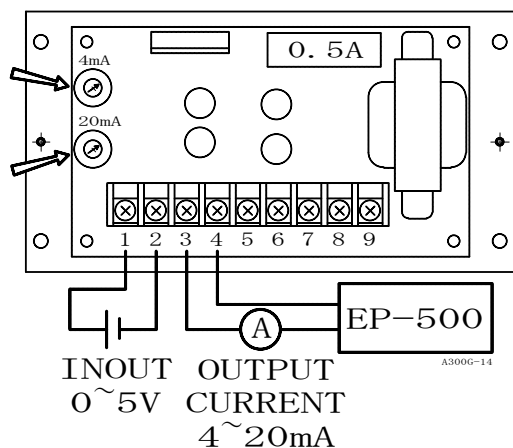


(1) ADJUSTMENT FOR THE BOOSTER AMP

Those are 2-VR of 4mA and 20mA on the circuit board.

Those VR are not necessary to adjust, because those VR are adjusted in our factory.

Its reference value is the following list.



Input voltage	Adjustment	Output current
0V	4mA	$4 \pm 0.1\text{mA}$
5.0V	20mA	$20 \pm 0.1\text{mA}$

It is necessary to adjust as connecting the ELECTRONIC REGULATOR.

(2) ADJUSTMENT

The ELECTRONIC REGULATOR's zero point and span point are factory adjusted at the time of shipment.

If necessary, however, they can be changed by adjusting the trimmer inside the terminal box with a small “-” driver, such as a precision driver.

Since adjustment trimmers are highly sensitive, output pressure will varies greatly with only a slight change in trimmer settings, and great care is required when making the adjustment.

Specially the zero point adjustment responds with a time lag, any adjustments must be mad slowly.

When making this adjustment, watch the pressure gauge, and take care not to over turning for trimmer.

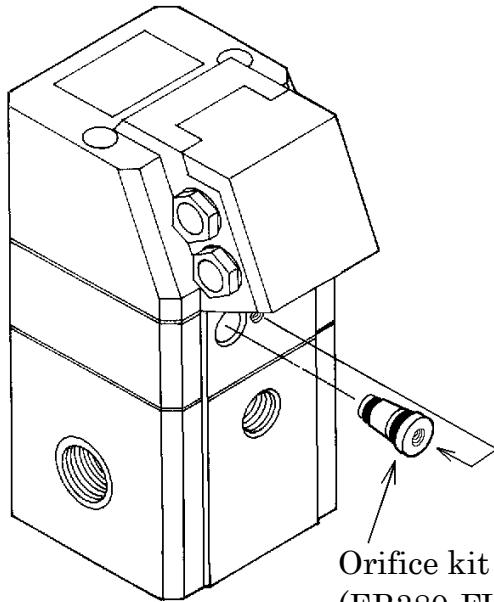
Because this trimmer are endless type, so that fragility composition.

Repeat adjustment above several times.

REFERENCE VALUE

Model	Supply pressure	Input current	Adjustment	Output pressure
EP-504	0.5MPa	4mA	ZERO	0~0.005MPa
		20mA	SPAN	0.4MPa
EP-505	0.6MPa	4mA	ZERO	0~0.005MPa
		20mA	SPAN	0.5MPa
EP-506	0.7MPa	4mA	ZERO	0~0.005MPa
		20mA	SPAN	0.6MPa
EP-507	0.8MPa	4mA	ZERO	0~0.005MPa
		20mA	SPAN	0.7MPa

The ELECTRONIC REGULATOR EP-500's orifice must be properly maintained. If clean air is always used, orifice maintenance is not functional part, check at least once a year to see if it is clogged, and either clean or replace it if necessary.



Plug the M4 screw into this place.

Orifice kit
(ER380-FL212013)

Cleaning method ·····

Orifice : Organic liquid cleanser
or Ultra-sonic cleaner.

Filter : Neuter cleanser.

Replacement ····· Please consult with
our company.

※ In case of dusty air.

In case of supplies dusty air (At open the drain cock, exhaust contaminants.), inside of apparatus is filthy with rubbish.

If in case above, make improve a air source purification.

Because those conditions cause to some trouble.

- (1) The ELECTRONIC REGULATOR uses precision parts and electronic circuits, so please do not break up without the orifice and filter.
- (2) Please do not the insulation test, because the body of ELECTRONIC REGULATOR is connecting inside circuits with condensers. If you do the insulation test the inside circuits is destroyed.
- (3) The cause of many troubles is dusty air, so please supply clean air earnestly.