

**POWER SUPPLY UNIT
PE-30S SERIES**

CODE: I031046900E
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For your safety

We describe warning messages in this manual. Before use, make sure to understand the meaning of these messages.

● **Meaning of warning messages**



DANGER

This indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury. This signal word is to be limited to the most extreme situations.



WARNING

This indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.



CAUTION

This indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices. Without safety alert indication of hazardous situation which, If not avoided, could result in property damage.

● **Symbols**



Warning

DO NOT TOUCH THE INSIDE TO AVOID ELECTRIC SHOCK

Preface

This manual describes the operation of the PE-30S Series.

Be sure to read this manual before using the product to ensure proper and safe operation of the instrument. Also safely store the manual so it is readily available whenever necessary.

Product specifications and appearance, as well as the contents of this manual are subject to change without notice.

3 Connector Specifications

MFC Connector

Pin No.	Signal name
1	DPM Power Supply 5V (Note 1)
2	Flow Signal Output 0-5V
3	Reference Voltage 5V
4	Reference Voltage COM
5	N/C
6	N/C
7	MFC Setting Voltage Output 0-5V
8	MFC Flow Signal Input 0-5V
9	N/C
10	Power Supply Voltage +15V
11	Power Supply Voltage -15V
12	Valve Power Supply -15V (Note 4)
13	DPM Power Supply COM
14	Flow Signal Output COM
15	Setting Voltage Input 0-5V
16	Soft Start COM (400)
17	N/C
18	Soft Start Terminal (400)
19	Valve Control Output
20	N/C
21	N/C
22	N/C
23	Power Supply Voltage COM (Note 2)
24	Valve Power Supply COM (Note 3)
PE-31S: SEC	
PE-34S: SEC-1 ~ SEC-4	
Connector used: 57GE-40240-751-FA	
Connector applicable: 57-30240	
Manufacturer: DDK	

External Input/Output Connector

Pin No.	Signal name
1	DPM Power Supply 5V (Note 1)
2	DPM Power Supply COM
3	Reference Voltage 5V
4	Reference Voltage COM
5	N/C
6	N/C
7	MFC Setting Voltage Input 4-20mA
8	MFC Setting Voltage Output 0-5V
9	Flow Signal Output 0-5V
10	Flow Current Output + 4-20mA
11	N/C
12	Power Supply Voltage +15V
13	Valve Control Input
14	Valve Open Signal +15V
15	Valve Close Signal -15V
16	DPM Power Supply COM
17	Soft Start Terminal (400)
18	Soft Start COM (400)
19	Alarm Output High Collector
20	Alarm Output High Emitter
21	Alarm Output Low Collector
22	Alarm Output Low Emitter
23	Setting Current Input - 4-20mA
24	N/C
25	Flow Current Output - 4-20mA
26	FG
27	FG
PE-31S: READ OUT	
PE-34S: READ OUT-1 ~ READ OUT-4	
Connector used: 17JE-13250-37-FA	
[M3 hexagon nut: 17L-003B6-CF]	
Connector applicable: 17JE-23250-02(D8B)-CG	
[M3 authorized tally screw]	
Manufacturer: DDK	

Note

Note1) Each channel has a built-in slow blow fuse. Do not apply more than rated current for each channel.

Note2) Use this terminal as a Signal COM.

Note3) This is combined with the Power Supply Voltage ±15V COM

Note4) Refer to 5-(3).

WARNING

- Please perform necessarily the putting on and taking off of the connector in a state of AC power OFF.

1 Outline

This power unit is exclusively for MASS Flow Controller by our company (hereinafter MFC). MFC can be operated by a connector connection if exclusive connector cable, display unit and setting unit are used in combination. Two comparison circuits are included, which makes it possible to output alarm signals for upper limit and lower limit by comparing output with that from MFC. Setting signals and output signals can be transmitted by electric current mode from 4mA to 20mA, and long transmission is possible.

2 Specification

Item	Type	PE-31S	PE-34S
MFC Power Supply		+15V ±5% 200mA -15V ±5% 300mA	+15V ±5% 800mA -15V ±5% 1200mA
DPM Power Supply		+5V ±5% 500mA	+5V ±5% 2000mA
Reference Power Supply		+5V +15mV -0mV 5mA	+5V +15mV -0mV 20mA
AC Input Rating	AC100V ~ 240V (Allowance Input Power Voltage: AC90V ~ 250V)		
Frequency	50/60Hz		
Consumption Power		MAX 30VA	MAX 90VA
Dimension (mm)		60(W) × 95(D) × 125(H)	160(W) × 95(D) × 125(H)
Weight		660g	1480g
Output Signal		DC0 ~ 5V 5mA MAX 1 Channel	DC0 ~ 5V 5mA MAX 4 Channel
Alarm Output		High Limit, Low Limit, 2 point Open-collector Output × (Connecting Channel) Maximum Rating DC30V 50mA	
Current Input/Output		Setting Input: 4 ~ 20mA (Enable by the switch) Flow Output: 4 ~ 20mA (±0.2%FS) × (Connecting Channel) ※Not isolated Conversion accuracy: ±0.2%FS Maximum Transmission distance: 50m	
Temperature/Humidity		5 ~ 50°C (Altitude up to 2000m) / 30 ~ 85% (Non condensing)	
Dielectric Resistance		Between AC line and body case DC500V more than 5MΩ by the Megger	
Dielectric strength voltage		Between AC line and body case AC1500V 60Hz for a minute	
Conformable Directive		EMC Directive / Low Voltage Directive / RoHS Directive	
Accessory		Instruction Manual / Power Cable 3m [AC125V 7A] (Note2)	

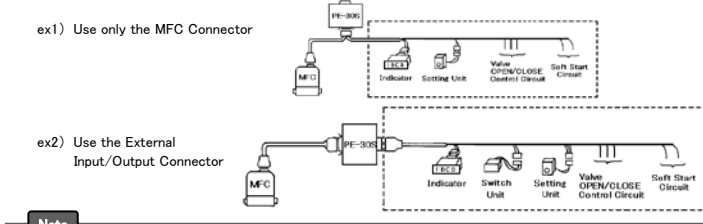
Note

- Note1) Between the MFC Power Supply and DPM Power Supply are isolated.
- Note2) This cable may not be included when this product is exported to specific countries, and attach a label showing the rating of the power cable.
Please purchase it on the occasion of use with the voltage more than power supply input 125V separately.
- Note3) This power unit has no power switch. Install a power switch or a circuit breaker near the power unit to turn ON/OFF the power unit.

WARNING

- The accessory cord set (Power cable) cannot be used for other purpose except this unit.
 - The accessory cord set (Power cable) complies with PSE, UL, and CSA standard.
- When this unit is exported to or used in countries where the standard is not applied, use power cable that complies with the standard in those countries.

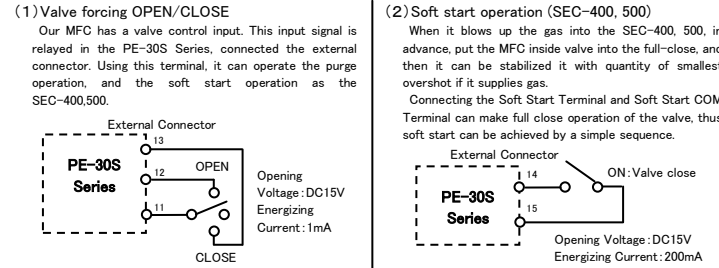
4 Peripheral Device Connection



Note

About a peripheral device and cable for our exclusive, please contact us.

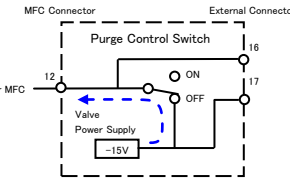
5 Valve Control



(3) Purge Operation (SEC-400, 500)
Power supply for valve should be turned off in order to make the internal thermal valve in SEC-400, 500 series of our MFC fully open. There is "Purge Control Switch" on the upper panel for this purpose.

[PURGE IN IS OFF; Initial Condition]

Power supply for the valve is connected, and the operation from purge terminal is invalid.



Note

Please use the external switch suitable for an energizing current.

6 Parts Introduction

- MFC Connector
Please connect with our product MFC.
PE-34S: SEC-1 ~ SEC-4
- External Input/Output Connector
Referring to "4. Peripheral Device Connection" diagram, connect an indicator and setting unit.
PE-34S: READ OUT-1 ~ READ OUT-4
- Power Supply Inlet
There is an inlet to insert the power cable for AC100 ~ 240V. Connect the attached power source cable.
- Fuse Holder
It should be use the slow blow fuse rating 2A (6.3 × 32mm)

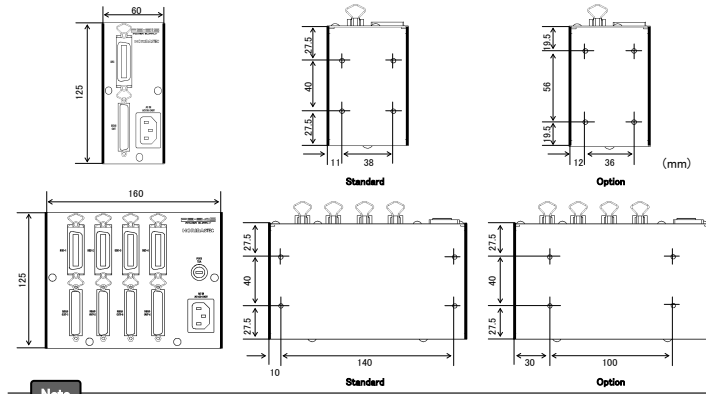
Note

PE-31S is not equipped with a fuse holder.

- Alarm Setting Volume
- Alarm Indicate LED
- Current - Voltage Changing-over Switch (Initial Condition: 1 IN)
The changing-over switch which setting input of the voltage or current accept.
- Purge Control Switch (Initial Condition: OFF)
The switch enabling ON-OFF control from an External Input/Output Connector with SEC-400, 500 inside valve power supply. When you don't use it, please do it at the OFF position.

7 Attachment Method

- Attachment screw position
PE-30S Series can be attached as the diagram below indicates. Please install in environment with space to ensure proper airflow.



Note

The chassis thickness should be decided taking weight of the unit into account and sems screw should be used.

8 Alarm Output

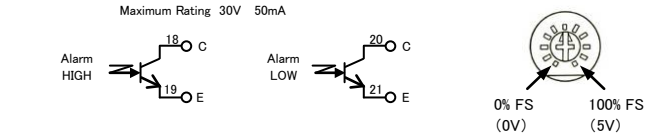
There are two kinds of alarm for PE-30S series, one is for upper limit and the other is for lower limit. Alarm level is set by the volume on the upper panel of PE-30S Series (H: for Higher limit, L: for Lower limit).

The scale in the volume is shown as a guide of alarm setting voltage versus full scale voltage (5V). Re-adjust the setting by using a calibrator when more precise setting is needed. The width of unit scale is about 500mV. There is no hold function in alarm. As for alarm contact and LED conditions, please refer to the following table.

Alarm	MFC Output		Alarm Set Point	Alarm Contact	Alarm LED
HIGH	Output	>	Set	ON	Turn ON
	Output	<	Set	OFF	Turn OFF
LOW	Output	>	Set	OFF	Turn OFF
	Output	<	Set	ON	Turn ON

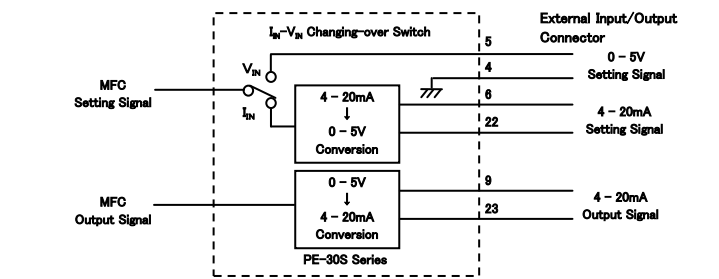
Note

Each alarm out put is based on photo-isolated and open-collector method.



9 Converted Outputs of Current and Voltage

PE-30S series can be operated by input/output from 4mA to 20mA. If you change I_{IN}-V_{IN} Switch on the upper panel from V_{IN} to I_{IN}, you can use setting signal from 4mA to 20mA (External Input/Output Connector). 4mA corresponds to 0V, and 20mA corresponds to 5V. There is current output any time irrespective of the switch position.

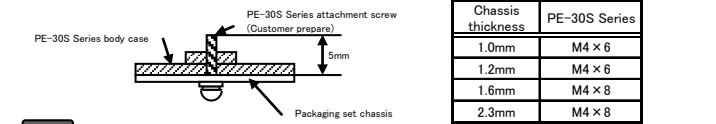


The current output in this unit is not isolated from Signal common. Therefore, the transfer should be done preventing the common current from flowing. (Error will occur if the Signal common from emitter and receptor is connected.)

Note

Maximum resistance for the current from 4mA to 20mA (output signal) is 250 Ω.

- Recommend attachment screw
The attachment of this unit, please follow the below diagram and item of the chart to keep the insulation between the attachment screw and the inside parts.

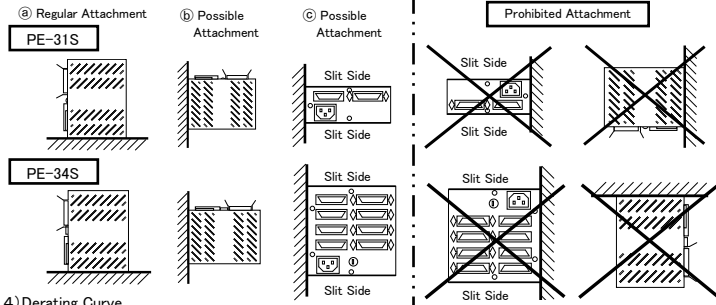


Note

The chassis thickness should be decided taking weight of the unit into account and sems screw should be used.

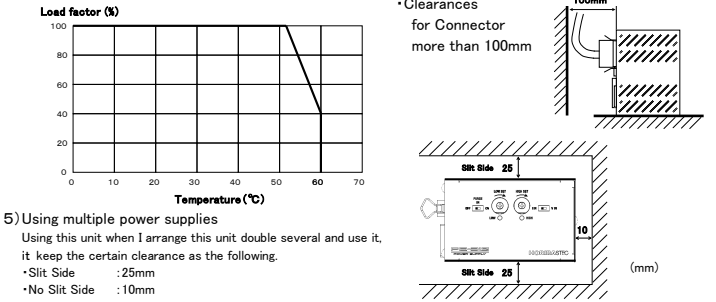
3) Attachment Direction

The attachment direction of this product does as following: ③, ④, ⑤. The life of an electrolysis condenser having built-in is about 5 years. But the Possible Attachment (④, ⑤), it is about 3 years.



4) Derating Curve

It is common all attachment direction.



- Using this unit when I arrange this unit double several and use it, it keep the certain clearance as the following.
- Slit Side : 25mm
 - No Slit Side : 10mm

PRODUCT WARRANTY

- Period:
This product is warranted for one (1) year (parts and labor) from date of shipment. Repair will be provided free of charge during this period if the product is returned to HORIBA STEC or authorized service representative with a description of the problem. HORIBA STEC is not responsible for damage due to customer neglect or improper operation of this product.
- Scope:
Warranty coverage is restricted to this product only. HORIBA STEC is not responsible for damage to other components due to improper operation of this product.
- Warranty:
Replacement parts are warranted for ninety (90) days or the remainder of the warranty period (whichever is longer).
- HORIBA STEC is not responsible for damage due to:
 - a) Natural disasters
 - b) Miss-operation or abuse of this product
 - c) Operation or storage in an unsuitable environment
 - d) Operation outside of the rated specifications
 - e) Unauthorized alterations or retrofits to this productRepair expense with / without charge is to be determined as examination and / or disassembly of the returned

■ **Conformable Directive**

This equipment conforms to the following directives and standards;

CE	EMC:	EN61326-1 Class B, Industrial electromagnetic environment
	Safety:	EN61010-1

■ **Installation Environment**

This product is designed for the following environment.

- Installation Categories II
- Pollution degree 2

■ **FCC Rules**

Any changes or modifications not expressly approved by the party responsible for compliance shall void the user's authority to operate the equipment.

■ **Note**

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
—Reorient or relocate the receiving antenna.
—Increase the separation between the equipment and receiver.
—Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
—Consult the dealer or an experienced radio/TV technician for help.