

# Mini Chemical Regulator

## Model: PMR

### INSTRUCTION MANUAL

#### <Description>

##### ● Application

Semiconductor, medicals, and chemical industry related devices

##### ● Features

- The small regulator for liquid.
- This product can be used for various types of chemical fluids such as organic solvents or equivalent, as well as strong alkaline or acid fluids, since the part in contact with fluids is made of excellent anti-corrosive fluorine resin.

#### ⚠ WARNING

- Confirm the compatibility of the type of fluid to be used and the material of the part in contact with fluids before using this product.
- Before using this product, carefully read this instruction manual to learn the correct usage.
- Keep this instruction manual at hand to see it any time you need.
- Follow the correct usage of this product specified in this instruction manual.
- Comply with the statements of warning described in this instruction manual.

#### <About Instruction Manual>

- The information described in this manual is subject to change without prior notice, due to improvements of product in performance and/or functionality.
- No parts of this manual may be reproduced or utilized in any form or by any means.
- Please call Surpass Industry any time you lose this manual.
- Every effort was made to ensure that all information included in this manual were complete and accurate at the time of printing. If you have any point of doubt, errors, and omissions, please contact Surpass Industry.

#### ● Important Safety Instructions

#### <About Marks Used>

The meanings of the marks, such as WARNING and CAUTION, used in this manual are described as follows.

#### ⚠ WARNING

Indicates a potentially hazardous situation that, if not avoided, could result in user death or serious injury.

#### ⚠ CAUTION

Indicates a potentially hazardous situation that, if not avoided, could result in user injury or property damage accidents.

#### WARNING and CAUTION statements

Before using this product, carefully read the following safety instructions that should be always followed.

#### <About Usage and Handling >

#### ⚠ WARNING

- Never disassemble this product. Neglecting this caution may result in abnormal operation.
- As this product is the valve designed to control the flow rate at the secondary side, never use it as a check valve or ON/OFF valve.
- Do not use fluids containing foreign matters. Neglecting this warning may result in degradation of performance.

## 1. Specifications

Wetted Parts	PTFE, PFA
Applicable Fluid	Fluids (distilled water, chemical solution)
Operating Fluid temperature	10°C~90°C
Operating environment temperature	10°C~60°C
Operating first side pressure range	100~600 k P a
Operating second side pressure range	50~300kPa
Withstanding pressure	800 kPa
Operating flow rate	See the table below.

Model	Flow Rate (water)	Connection Type
PMR4-2P300P	10~1000 mL/min	PILLAR SUPER 300TYPE PILLAR FITTING P SERIES 1/4" (φ6.35 × φ3.95)
PMR4-3P300P	1~10 L/min	PILLAR SUPER 300TYPE PILLAR FITTING P SERIES 3/8" (φ9.53 × φ6.35)
PMR4-4P300P	1~15 L/min	PILLAR SUPER 300TYPE PILLAR FITTING P SERIES 1/2" (φ12.7 × φ9.53)

## 2. Mounting and Tubing

When mounting and tubing, follow the CAUTION statements below.

#### ⚠ CAUTION

- When mounting, do not mount the product with the IN side up and the OUT side down. Doing so stops letting the air out of the tube.
- Do not use this product in a place that could have vibration. Doing so may result in abnormal operation.
- When mounting the main unit, fix it firmly by four mounting holes on the base to prevent it from falling.
- When tubing, confirm the arrow marked on the main unit that indicate the flow direction (→) and the I(IN) and O(OUT) marks marked on the joint part, to place the product in the correct position. Reverse tubing may result in abnormal operation.
- Connect the tube without any moment or tension to bend the joint portion. Neglecting this may result in leakage.
- For applications of the connecting part, refer to a brochure or an instruction manual provided with your connecting part.

## 3. Usage

### 3-1 Air exhaustion

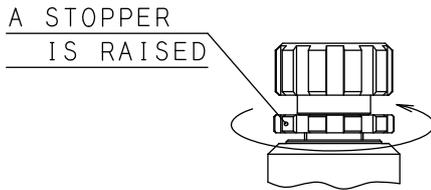
- ① Be sure to release the air from the main unit completely. Neglecting this may cause the flow rate.
- ② Confirm that it has been stopped to generate air babbles from the OUT side.

#### ⚠ CAUTION

- Whenever using this product, follow the specified flow rate range and the pilot air pressure range. Neglecting this may cause a product failure or damage, or an accident.
- Whenever using, apply the loads to the outlet side. Otherwise, the outlet side pressure cannot be controlled.
- Whenever using this product, set the outlet side pressure value lower than the inlet side one. Neglecting this may decrease the flow rate.
- Whenever using this product, exhaust the air in the main unit completely. Neglecting this may decrease the flow rate.
- When the knob is hard to turn, first reduce the inlet pressure and then turn the knob. Turning the knob forcibly may cause a product failure or damage, or an accident.
- Fix the knob by the knob stopper, neglecting this may be unstable the flow rate

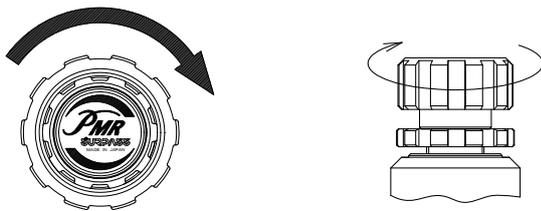
### 3-2 Outlet side pressure setting

- ① A stopper is raised.

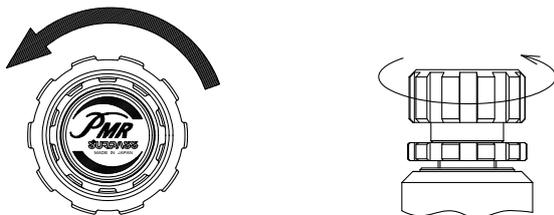


- ② Turn the knob to set the outlet pressure value.  
Turning the knob H direction increases the pressure,  
and turning it L direction decreases the pressure.

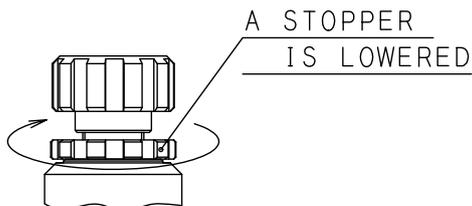
<In a case of increasing the pressure>



<In a case of decreasing the pressure>



- ③ Wind down the stopper to its lower limit.



### 4. Warranty

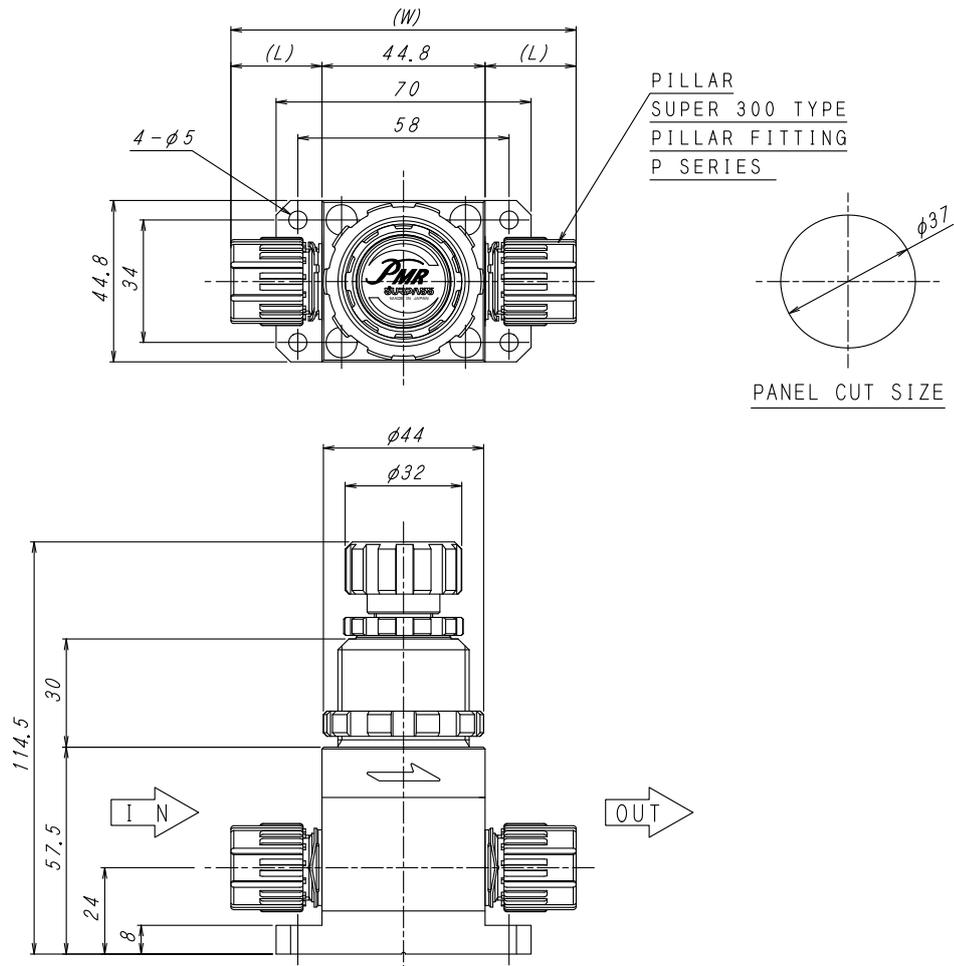
The warranty runs for one year after the day when Surpass Industry products are delivered from Surpass factory in Japan. In case Surpass Industry should agree in writing that the defects in performance or material were caused by faulty design or workmanship of Surpass Industry, replacement products will be supplied free of charge. This warranty shall not be applied to any defects caused by misuse, alteration, neglectful treatment, and neglect of our recommendations or instructions.

In addition, we are not be liable to any direct or consequential loss, damage, and personal injury due to an unauthorized usage in combination with other products and an improper usage outside of the specifications. Our product warranty shall be limited to replacement of product.

Replacement with expense to the purchaser shall be applied to the followings:

- Any defective products caused by usage that is not described in the Instruction Manual.
- Any defective products caused by neglectful treatment.
- Any defective products caused by decomposition, alteration, and improper adjustment or repair.
- Any defects of products caused by acts of God including natural disaster or fires.
- Consumables and accessories.

<Outside Dimensions and Part Designations>



• Dimensions

Model	(L)	(W)	TUBE SIZE
PMR4-2P300P	19	83	1/4" (φ 6.35 × φ 3.95)
PMR4-3P300P	25	94.8	3/8" (φ 9.53 × φ 6.35)
PMR4-4P300P	29	102.8	1/2" (φ 12.7 × φ 9.53)

<Call to:>

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