FJ400053D1
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Flow controller
Model 2203
Instruction Manual

Thank you for your selection of the “KOFLOC Flow Controller.”
Prior to using your new product, please read this manual thoroughly to ensure that your new product will deliver its full performance.

CAUTION

This is a differential pressure regulator that keeps mass flows at a constant rate even when the load pressure on the outlet side fluctuates and can be used at a pressure and temperature up to:

Max. operating pressure : 0.8MPa(G)

Max. operating temperature : 60℃

The use of the valve with gases or toxic gases other than those specified on the valve body or at a pressure exceeding the maximum allowable pressure may cause serious injury. Such a way of use is strictly prohibited.

Foreword

Thank you for your selection of Model 2203.

- The contents of the manual are subject to change without prior notice.
- The manual has been carefully created and checked before shipment. If you notice any deficiencies, errors or omissions, however, please inform us.
- The warranty period of the needle valve is one year from the date of shipment from our plant.
- Any failures which may occur during this period and are attributable to our workmanship will be corrected free of charge.
- KOFLOC shall bear no responsibility whatsoever for breakage or troubles of equipment resulting from neglect of the precautions presented in this manual or use of the needle valve in manners not described herein.

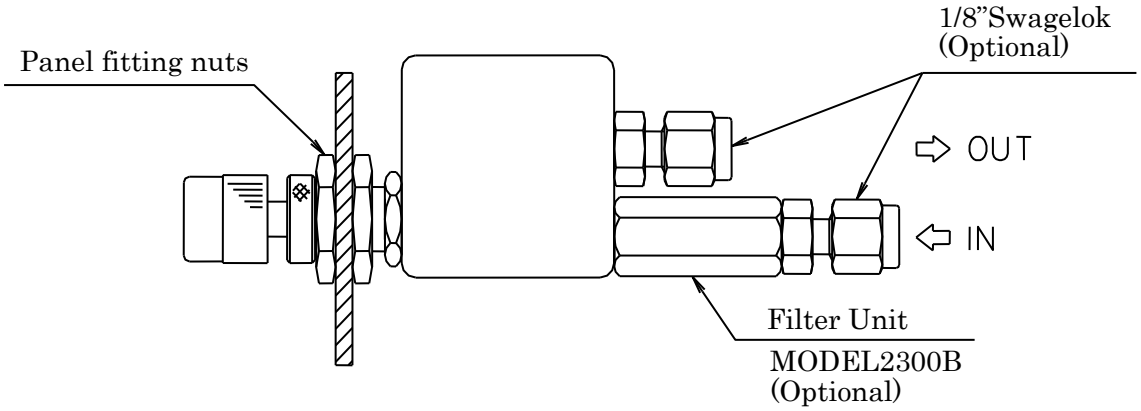
1. Features

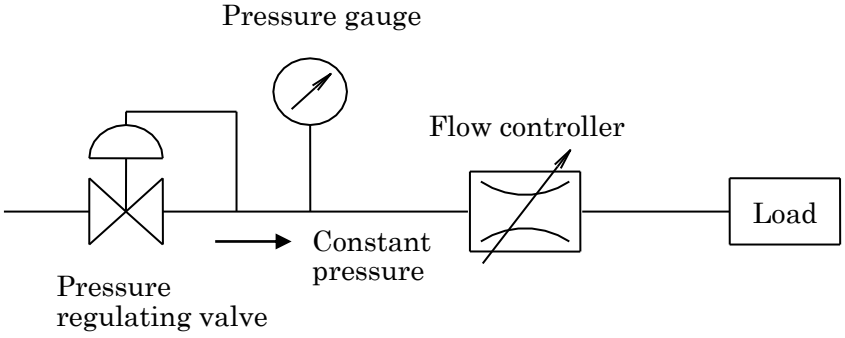
This flow controller Model 2203 is a differential pressure regulator designed to control minute gas flows precisely and to keep a certain constant flow rate. This control valve keeps mass flows at a constant rate under a given constant level of supply pressure even when the load pressure on the secondary side (outlet side) fluctuates. It incorporates a diaphragm valve that compensates for changes in the load pressure and a precision needle valve (same construction as Model 2412) that precisely regulates flow.

2. Example of use

How to mount the controller on a panel

1) Remove the knob.
2) Loosen to remove the knurled nut with fingers. Remove one panel mounting nut, insert the needle through the panel mounting hole (ϕ13) from the backside and sandwich the panel with the mounting nuts to mount the body as shown.





3. Other precautions

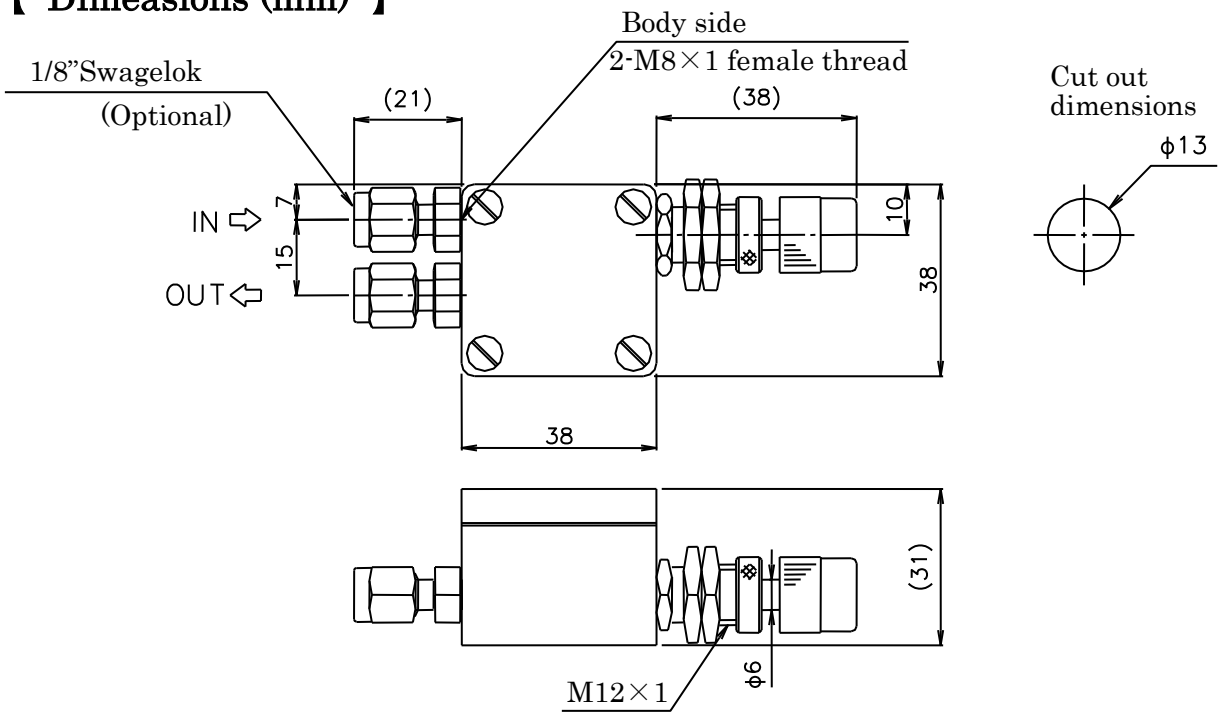
1) The optional filter unit is designed for minute flows. It will cause a large pressure loss at a rate of 5 L/MIN or over and therefore should not be installed under such conditions.
2) The gas connecting thread of Model 2203 body is M8 × 1, but a commercially available joint (M8 × 1) cannot be installed directly. Please order for a conversion joint (M8 × 1 + Rc 1/8 or M8 × 1 + Rc 1/4) dedicated to Model 2203.
3) A Swagelok tube fitting (1/8" tube, 1/4" tube) that can be installed directly on the M8 × 1 female thread of Model 2203 body is also available.
4) When the joint is a Swagelok for 1/4", install a dummy filter unit on the IN side and shift the IN/OUT joint mounting positions so that the hex. cap nuts of the joints will not interfere each other.
5) Be sure to stabilize the supply pressure (a gas pressure to be applied to IN) with a regulator and apply a slightly higher pressure in consideration of a pressure loss. If the primary side pressure fluctuates, the flow will not become stable. (See the flow sheet).
6) Ensure that a pressure difference between the supply pressure and the outlet pressure is 0.05 MPa or over. If the pressure difference is smaller, the flow will not increase.
7) This flow controller is designed for gas only and cannot be used for liquids such as water.
8) Zero stop is also possible but not guaranteed. Where exact zero stop is required, use a stop valve.
9) Never allow dust/dirt, water, oil and other foreign matter to enter connecting holes.
10) Do not turn the knob in the closing direction excessively. Or the internal orifice will be damaged to disable control.

【 Specifications 】

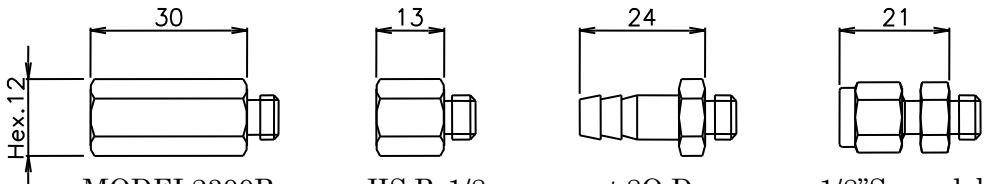
Rated flow rate	10mL/min. up to 20L/min
Control accuracy	Fluctuation within 1.0% indicated valve of load pressure fluctuation (Inlet-to-outlet pressure difference 0.05MPa or over)
Adjust screw rotation	Approx. 12 tums
Max. operating pressure	0.8MPa
Max. operating temperature	60℃
Materials of areas in contact with fluid	(A) Al, Brass, SUS316, POM, NBR (SS) SUS316, PCTFE, FKM
Connection port	Rc1/8 (M8×1+Rc1/8)

＊The flow rates given above are based on a usage environment of 1atm,20℃, for conversion of Air.

【 Dimeasions (mm) 】



＜ Connection fitting ＞ (Optional)
Connecting side M8 × 1 male thread



MODEL2300B　JIS Rc1/8　ϕ 8O.D. hose nipple　1/8"Swagelok (Optional)

【Product Warranty Policy】

Thank you for your continued support of KOFLOC products.
Unless specified otherwise in quotations, contracts or specifications when you place orders for KOFLOC products, the following warranty policy will apply.
Warranty Policy:

① Warranty period

The warranty period is one (1) year from shipment, provided that the product is used within the KOFLOC specification.

② Scope of warranty

If the KOFLOC product fails during the warranty period due to a cause attributable to KOFLOC, KOFLOC shall, at its option and expense, provide a replacement product or repair the failed product at the KOFLOC factory.
This warranty, however, shall not cover damages due to a cause not attributable to KOFLOC; opportunity loss, lost profit, secondary disaster, accident compensation suffered by the customer and damage to other equipment and any other damages due to a failure of the KOFLOC product.

③ Non-warranty

The warranty shall not apply to the following failures and damages even if they occur during the warranty period:

① Failure due to misuse or improper repair or modification. (Failures resulting from use under conditions different from the manufacturing specifications are included.)
② Damage and failure due to dropping of the product after purchase.
③ Failure due to fire, earthquake, flood, lightning or other natural disaster; or riot, war or the like.
④ Failure due to intrusion of foreign matter from piping.
⑤ Failure caused by a specific problem due to combination with other incorporated equipment.
⑥ Other failures and damages which are considered not attributable to KOFLOC.

Please be aware that the warranty shall not cover opportunity loss suffered by you or your customer or damage to other equipment or any other damages due to a failure of the KOFLOC product.

KOFLOC Corp. URL : http://www.kofloc.co.jp