



Model PFLOW4008 Series

MEMS Mass Flow Sensors

(VA.1)



MEMS Mass Flow Sensor

PFLOW4008 Series

PFLOW4008 is specially customized for Pewartron AG for their proprietary applications.

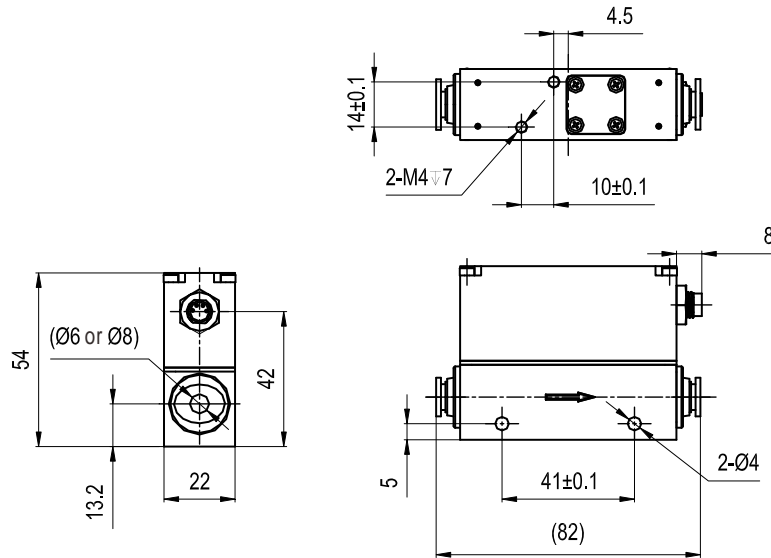
The sensor is utilizing the Company's MEMS mass flow sensor with customized circuitry and enclosure.



Specifications

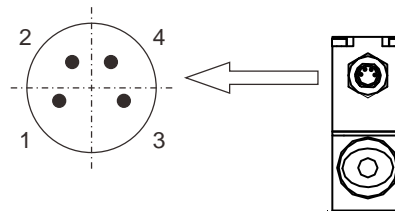
Model	Value	Unit
DN	8	mm
Flowrange	0... 2 ... 50	SLPM
Accuracy	$\pm(1.5 + 0.2FS)$	%
Gas compatible	Non-corrosive/non-explosive	
Pressure rating	5	bar a
Max. pressure	8	bar
Mechanical connector	6 mm/ 8mm One-touch connectors	
Electrical interface	Linear: Analog 0~ 10VDC, I2C, IO-Link	
Body	Al-alloy 6063	
Protection rating	IP67	
Power supply	12 ~ 30	Vdc
Working current	< 20	mA
Null shift	± 30	mVdc
Temperature coefficient	< ± 0.12	%/°C
Maximum pressure loss (@ 6 mbar)	600	Pa
Response time	10	msec
Operation temperature	-10 ~ +55	°C
Humidity	<95%RH, no condensation	
CE	EN50081/50082	
Electrical connection	M8	
Standard condition	0°C, 1013 mbar	

Dimensions



Electrical connection

Pin #	Definition
1	Power Supply (12~ 30VDC)
2	Analog Output (0~ 10VDC)
3	GND
4	IO-Link output



Order Information

PFLOW4008 - A - B - C - D

- A : full scale flowrate, starting 2 to 50 SLPM. e.g. 2 = 0~2 SLPM
- B : mechanical connectors, available: NPT, BSPT, One-touch
- C: Digital output interface: available: I2C, RS485 and IO-Link
- D: Gas - Air, N2, O2, Ar, CO2, others please contact manufacturer

Important Notices

Wetted Materials and Compatibility

The sensor body and the flow channel are made of aluminum alloy with surface anodic oxidation. The sensor chip comprises of silicon, silicon nitride and silicon dioxide and the sensor chip surfaces are passivated with silicon nitride and silicon dioxide.

Cautions for Handling and Installations

The product at the time of shipment is fully inspected for product quality and meets all safety requirements. Additional safety measures during handling and installation should be applied. To prevent ESD (electrostatic discharge) damage and /or degradation, take customary and statutory ESD precautions when handling. Do power the product with the correct polarity, voltage & amperage. All precautions and measures for electrical voltage handling must apply. The product sealing is ensured to work under working pressure of 30 kPa and is leakage proof before the shipment. But cautions and further leakage test are important at installation as well since any leakage could cause severe safety issue.

This product contains no user serviceable components. Do not attempt to disassemble, substitute parts or perform unauthorized modifications to the product. Doing so will forfeit the terms of the warranty and cause the liability to any damages thereafter. It should only be serviced by authorized personnel. Upon requests, Pewatron will provide necessary technical support and/or training of the personnel.

Cautions for Product Applications

The product is designed for use with general purpose gases such as air and nitrogen. It is advised that the products are best used for non-explosive clean gases. The sensors cannot be used for gas metrology of fluoride or fluoride-containing gases. For updates of the product certification information, please contact the manufacturer. Use for other gases such as extreme corrosive and toxic may cause the product malfunctioning or even severe damages.

Don't expose the product's electronics other than the inner flow channel to any liquids, the unit does not have a water proof electronics. For medical sterilization procedure, please consult the manufacturer. Don't flow gas in conditions that can cause condensing water vapor to be trapped inside the unit during operation as the accuracy could be significantly influenced.

It is suggested to design your application so that nominal flow rate is approximately 70% of the full scale flow rating of the sensor. Don't use a sensor with a flow

range at the extreme cases, for instance, don't use a 200 SLPM sensor for a 2 SLPM application.

Warranty and Liability

(Effective January 2010)

Pewatron warrants the products sold hereunder, properly used and properly installed under normal circumstances and service as described in this user manual, shall be free from faulty materials or workmanship for 180 days for OEM products, and 365 days for non-OEM products from the date of shipment. This warranty period is inclusive of any statutory warranty. Any repair or replacement serviced product shall bear the same terms in this warranty.

Pewatron makes no warranty, representation, or guarantee and shall not assume any liability regarding the suitability of the products described in this manual for any purposes that are not specified in this manual. The users shall be held for full responsibility for validating the performance and suitability of the products for their particular design and applications. For any of the misuse of the products out of the scope described herein, the user shall indemnify and hold Pewatron and its officers, employees, subsidiaries, affiliates and sales channels harmless against all claims, costs, damages, and expense or reasonable attorney fee from direct or indirect sources.

Pewatron makes no other warranty, express or implied and assumes no liability for any special or incidental damage or charges, including but not limited to any damages or charges due to installation, dismantling, reinstallation or any other consequential or indirect damages of any kind. To the extent permitted by law, the exclusive remedy of the user or purchaser, and the limit of Pewatron's liability for any and all losses, injuries or damages concerning the products including claims based on contract, negligence, tort, strictly liability or otherwise shall be the return of products to Pewatron, and upon verification of Pewatron to prove to be defective, at its sole option, to refund, repair or replacement of the products. No action, regardless of form, may be brought against Pewatron more than 365 days after a cause of action has accrued. The products returned under warranty to Pewatron shall be at user or purchaser's risk of loss, and will be returned, if at all, at Pewatron's risk of loss. Purchasers or users are deemed to have accepted this limitation of warranty and liability, which contains the complete and exclusive limited warranty of Pewatron, and it shall not be amended, modified or its terms waived except by Pewatron's sole action.

The product information provided in this manual is believed to be accurate and reliable at the time of release to or made available to the users. However, Pewatron shall assume no responsibility for any inaccuracies and/or errors and reserves the rights to make changes without further notice for the relevant information herein.

This warranty is subject to the following exclusions:

- (1) Products that have been altered, modified or have been subject to unusual physical or electrical circumstances indicated but not limited to those stated in this document or any other actions which cannot be deemed as proper use of the products;
- (2) Pewatron does not provide any warranty on finished goods manufactured by others. Only the original manufacturer's warranty applies;
- (3) Products re-sold to the third parties.

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