



TECHNICAL GUIDANCE

AXIAL-FLOW TYPE MICRO TURBINE FLOWMETER

TW-070

Measurement with all metal-free wet components

The wet parts are composed of ceramics and super-engineering plastics PSU (polysulfone). This metal-free flowmeter allows low flow measurement of strong acid and alkaline liquids as low as 30mL/min.

OUTLINE

TW-070 axial-flow type micro flowmeter, as a full-flow flowmeter, is capable of measuring a flow rate of as low as 30mL/min through optical signal type detection with little rotational resistance.

The flowmeter is composed of metal-free liquid contact materials so that it is capable of measuring the flow rate of strong acid and alkaline liquids.

In order to secure wear resistance, ceramics are used for moving parts.

The flowmeters are widely used in semiconductor manufacturing, chemical and food processing industries.

Low-flow rate measuring system is easily configured by combining it with the RR900N Series.



Typical indicator
RR900N Series

FEATURES

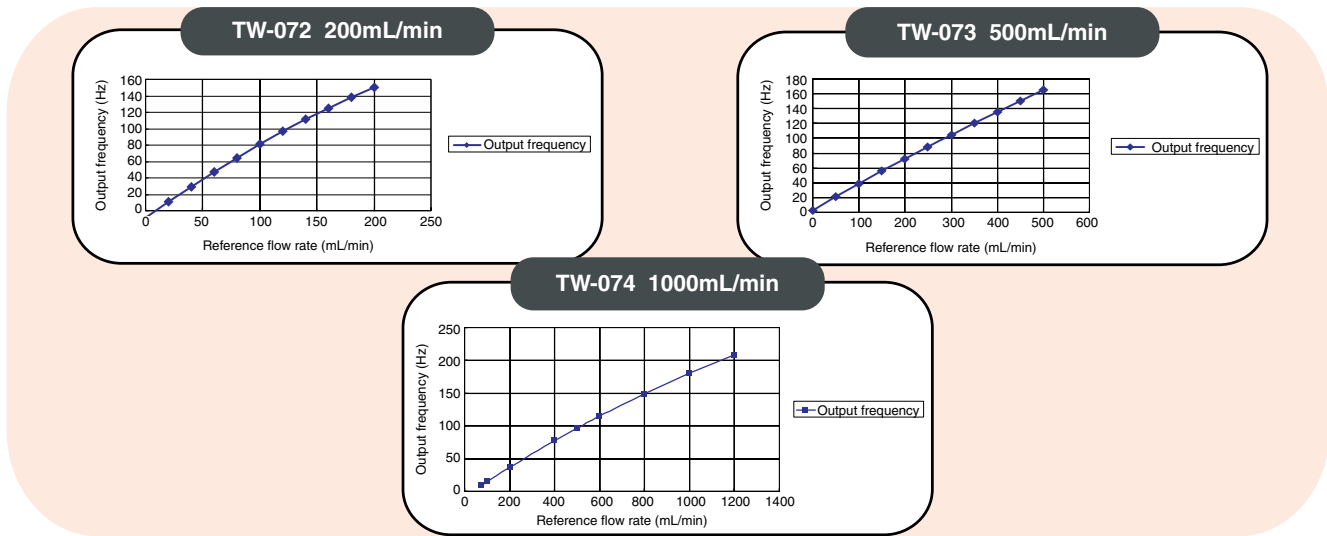
- Measurable as low as 30mL/min.
- Infrared detection system less susceptible to outside light.
- Metal-free wet components made of super-engineering plastics PSU (polysulfone) and ceramics.
- Rigid ceramics used for the moving parts.
- Compact design.
- A full-flow system clears away bubbles quickly.

SPECIFICATIONS

Model	Measuring range (mL/min)	Orifices in flow-path (mm)	Maximum pressure loss (kPa)
TW-072	30 to 200	∅0.5 × 3	20 kPa
TW-073	50 to 500	∅1.0 × 3	8 kPa
TW-074	100 to 1000	∅2.0 × 3	3 kPa

Measuring fluid	Water and various liquids (Viscosity: Less than 2mPa·s, Foreign matter: Less than ∅0.03mm)
Operating fluid pressure	Max. 0.3MPa at 23°C Test pressure (Hydraulic press.): 0.45MPa at 23°C
Operating fluid temperature	23±15°C
Operating ambient temperature	23±15°C (Without freezing or dew condensation)
Flow characteristic	The pulse frequency of the scale range (Maximum flow rate) is indicated on the tag plate.
└ Linearity	Within ±5%F.S.
└ Repeatability	Within ±2%F.S.
Connection	Inlet: Rc1/4, Outlet: Rc1/4
Installation posture	Horizontal or vertical (Flow direction, Bottom to Top)
Flow direction	Flow direction is indicated by a single way arrow on the body.
Supply voltage	DC12V ±10% 30mA
Construction	Non-waterproof
Pulse output	NPN Open collector (Unscaled pulse) Output rating (Max.) DC15V 10mA
Electric connection	3-core shield 500mm length of lead wire
Mass	(Approx.) 70g

EXAMPLES OF FLOW CHARACTERISTIC



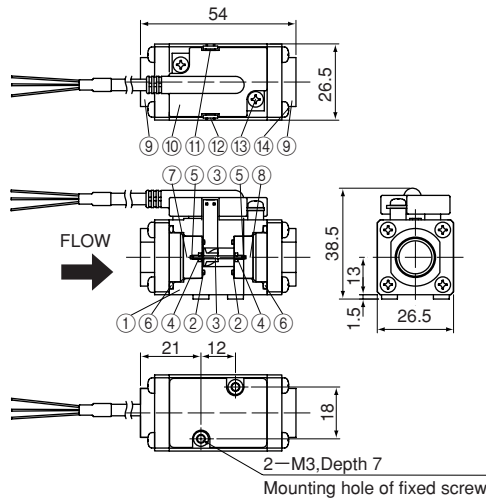
DIMENSION AND MATERIAL

No.	Parts name	Material
1	Body	PSU
2	O-ring	FKM
3	Wheel	PSU + Zirconia *1
4	Bearing	Alumina *2
5	Ball	Zirconia *1
6	O-ring	FKM
7	Input bearing guide	PSU
8	Bearing guide	PSU
9	Joint	PSU
10	Circuit mold	PVC
11	Euphotic sensor	FR-4
12	Photo detector	FR-4
13	Screw	SUS304
14	Screw	SUS304

Wetted part: ① to ⑨

*1 Zirconia is equivalent to Z-201.

*2 The content of alumina is 99.5% or more.



WIRING SPECIFICATION

Wire color	TW-07□
Red	Power supply (+)
Black	Power supply (-) Open collector, Pulse GND
White	Open collector pulse output

PRECAUTION

- Avoid installing the signal cable side by side with other electric power or power line.
- Confirm that there is no stagnant air around the wheel, and use the flowmeter with water filled to the brim.
- Avoid the air blow because the wheel or axis may get damaged.
- Install a filter in case there is the possibility of foreign matter getting mixed in.
- The Instruction Manual describes, in details, installation, operation, and maintenance.
- Contact Tokyo Keiso Co., Ltd. with Serial No. and Mfg. No.

DESIGNATED ITEMS WHEN ORDERING

- Name of fluid, Temperature, and Pressure
- Model code

* Specification is subject to change without notice.

TOKYO KEISO CO., LTD.

Head Office : Shiba Toho Building, 1-7-24 Shibakoen, Minato-ku, Tokyo 105-8558
 Tel : +81-3-3431-1625 (KEY) ; Fax : +81-3-3433-4922
 e-mail : overseas.sales@tokyokeiso.co.jp ; URL : http://www.tokyokeiso.co.jp

