TECHNICAL GUIDANCE

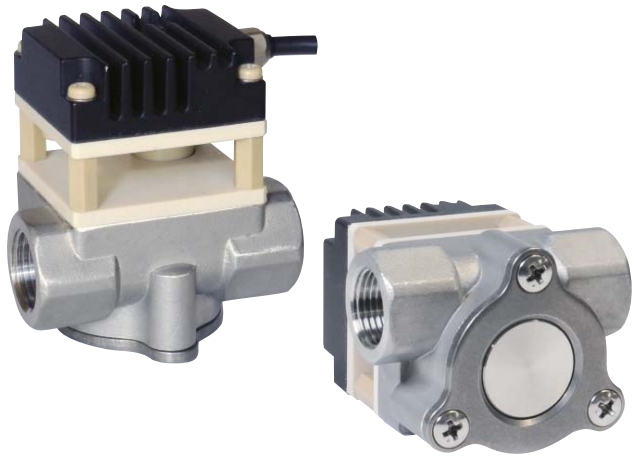
For maximum 150°C liquid services including Galden and Fluorinert
Suitable for semiconductor chillers

W-3000

MINI-WHEEL FLOWMETER

OUTLINE

Adding the radiator fins on the well-established W-2000 series, the W-3000 mini-wheel flowmeter series makes it possible to measure liquids as high as 150°C.
This model is suitable for assembling in the semiconductor chiller devices for high temperature services.



FEATURES

- ❑ Compact and light weight design with a precision casting body
- ❑ Open collector pulse output available
- ❑ Continuous measurement of high temperature services up to 150°C with radiation fins
- ❑ Easy overhauling, cleaning and maintenance
- ❑ Complying with RoHS

STANDARD SPECIFICATION

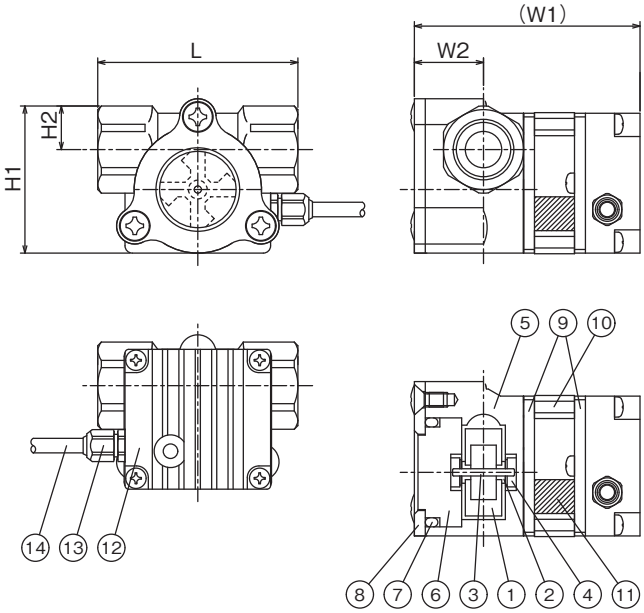
- ● Measuring liquid : Liquids including Fluorinert and Galden
- ● Allowable viscosity : 2 mPa・s or less for models W-3012 through W-3015
  3 mPa・s or less for models W-3016 through W-3019
- ● Fluid pressure : Max.1.0 MPa
- ● Fluid temperature : Max.150°C
- ● Ambient temperature : Max 50°C (Without dew condensation)
- ● Flow direction and posture : The pipe line on which flowmeter is installed, is either in horizontal or vertical. For the installation on horizontal pipe, the wheel shaft must be always in horizontal and flow path (center line of pipe line) must be situated in the upper side of the wheel to fill the wheel chamber fully with liquids.
- ● Construction : Indoor use (equivalent to IP20)
- ● Output : Open collector pulse (Unscaled pulse)
- ● Duty : H (Changing depending on flow rate)
  L (2 ms for reference value)
- ● Pulse frequency : Approximately 75 to 95 Hz at the maximum flow rate (Actual measurement value indicated on tag plate)
- ● Power supply : 5 to 12 VDC, 12 mA
- ● Load rating : Max. 12 VDC, 15 mA
- ● Accuracy : ±5% F.S. for model W-3012
  ±3% F.S. for models W-3013 through W-3019
- ● Electric connection : AWG 26 (12/0.12) x 3-core UL 2941 4-core cable (Green: Non-use)

MODEL CODE

Model code													Description	
W-30	□	□	-	□	□	-	□	□	□	□	-	□		
Output	1												Pulse output: Open collector	
Range of flow rate Connection size		2											0.5 to 3 L/min (Flow path nozzle φ3.0)	Connection Rc 3/8
		3											0.7 to 5 L/min (Flow path nozzle φ4.0)	
		4											1 to 10 L/min (Flow path nozzle φ6.4)	
		5											2 to 20 L/min (Flow path nozzle φ10)	
		6											3 to 30 L/min (Flow path nozzle φ12)	Connection Rc 1/2
		7											4 to 40 L/min (Flow path nozzle φ14)	
		8											5 to 50 L/min (Flow path nozzle φ16)	
		9											6 to 60 L/min (Flow path nozzle φ16)	Connection Rc 3/4
Inflow direction				R									Right to Left or Bottom to Top(Wheel on left side against flow path)(Standard)	
				L									Left to Right or Bottom to Top (Wheel on right side against flow path)	
Cable length					1								1 m (Standard)	
					2								2 m	
Material of O-ring							F						FKM (Fluorocarbon rubber)	
							S						FVMQ (Fluorosilicone rubber)	
Material of monitoring window								S					SCS14	
Materials of wheel, bearing, shaft and bush									3				Wheel: PPS, Bearing and bush: carbon containing PTFE, Shaft: Quarts glass	
Accessories										0			None	
Additional specifications (Add applicable numbers when multiple requirements are involved)												A	Degrease treatment (Standard)	
												B	Non-water treatment (Standard)	

Note: Do not hesitate to contact TOKYO KEISO Co., Ltd. for your specific requirements.

DIMENSION AND MATERIAL

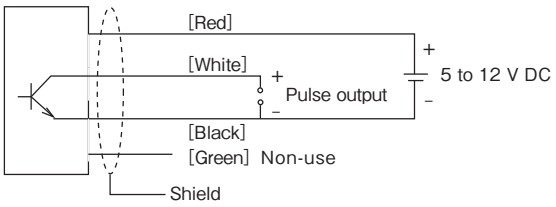


＜Inner structure＞

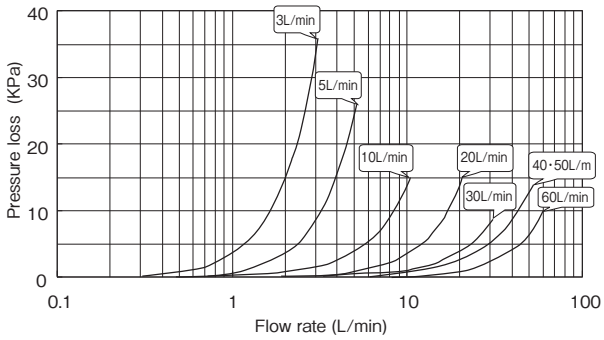
No.	Parts	Material
1	Wheel	PPS with a magnet embedded
2	Bearing	Carbon containing PTFE
3	Shaft	Quartz glass
4	Bush	Carbon containing PTFE
5	Body	SCS14
6	Monitoring window	SCS14 (Monitoring is not available)
7	O ring	Refer to MODEL CODE
8	Plate	SUS316
9	Heat insulation plate	PPS
10	Spacer	PPS
11	Sensor holder	PPS
12	Fin	ADC12
13	Cable clamp	Brass／EPDM
14	Cable	Covered with PVC

Connection size	L	H1	H2	W1	W2	Mass
Rc 3/8	55	41	12	62	19	350 g
Rc 1/2	70	43	14.5	65	22	400 g
Rc 3/4	80	49.5	17	65	22	500 g

WIRING



PRESSURE LOSS



NOTES

- ❑ Do not put a signal cable adjacent to other power lines.
- ❑ Inside diameter of process piping and fitting is to be more than that of flow path nozzle.
- ❑ Installation is to be made at the place free from the influence of external magnetic field which affects the property.
- ❑ Use this flowmeter where there is no stagnation of air around the wheel and also in the state of water filled up.
- ❑ Avoid the air blow since wheel and shaft may be damaged.
- ❑ The upstream straight runs of more than 10 D (D: inside diameter of pipe) is recommended when uneven or whirling flow is expected.
- ❑ Keep body and process piping warm, and do not prevent the ventilation between heat insulation plates.

* Specification is subject to change without notice.

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