

# Microstream flowsensor

## OF-Z

Excellent  
repeatability

Viscous fluid  
is measurable

Optimal control  
for fuel such  
as kerosene  
and heavy oil



Microstream flowsensor OF-Z is ideal for measuring a variety of liquids and it is capable of measuring small flow accurately.

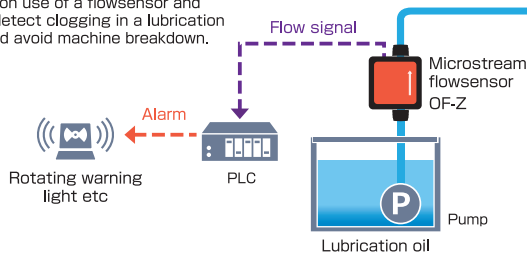
Specification		OF05ZAT-AR/MR	OF10ZAT-AR/MR	OF05ZT-AR/MR	OF10ZT-AR/MR										
Model		OF05ZAT-AR/MR	OF10ZAT-AR/MR	OF05ZT-AR/MR	OF10ZT-AR/MR										
Nominal diameter		5mm	10mm	5mm	10mm										
Accuracy guaranteed flow range	Liquid viscosity 0.3~0.8mPa·s	0.085~0.85L/min	0.7~5L/min	0.085~0.85L/min	0.7~5L/min										
	Liquid viscosity 0.8~2.0mPa·s	0.05~0.85L/min	0.35~5L/min	0.05~0.85L/min	0.35~5L/min										
	Liquid viscosity 2.0~5.0mPa·s	0.017~0.85L/min	0.17~5L/min	0.017~0.85L/min	0.17~5L/min										
	Liquid viscosity 5.0~200mPa·s	0.0085~0.85L/min	0.085~5L/min	0.0085~0.85L/min	0.085~5L/min										
Accuracy		±2%RS (Standard installation position)													
Measurable fluid ※1		Hot and cold water/Kerosene/Light oil/heavy oil		Weak acid/weak alkaline/hot and cold water/kerosene/light oil/heavy oil											
Maximum working pressure		0.5MPa (Liquid temperature at 20°C)													
Pressure loss(@ accuracy guaranteed maximum flow)		4 kPa or less	10 kPa or less	4 kPa or less	10 kPa or less										
Liquid viscosity range		0.3~200mPa·s													
Liquid temperature range		-10~+70°C (No freezing)													
Ambient working temperature / humidity range		-10~+70°C 35~85%RH (No condensation)													
Output signal	Voltage pulse output (Z□T-AR)	Pulse specification Cable	Load resistance 10kΩ or more Duty ratio 2 : 8 < ON : OFF < 8 : 2		<table border="1"> <thead> <tr> <th>Applied voltage</th> <th>High</th> <th>Low</th> </tr> </thead> <tbody> <tr> <td>3V DC</td> <td>2V DC or more</td> <td rowspan="3">1V DC or less</td> </tr> <tr> <td>12V DC</td> <td>10V DC or more</td> </tr> <tr> <td>24V DC</td> <td>20V DC or more</td> </tr> </tbody> </table>	Applied voltage	High	Low	3V DC	2V DC or more	1V DC or less	12V DC	10V DC or more	24V DC	20V DC or more
	Applied voltage		High	Low											
3V DC	2V DC or more	1V DC or less													
12V DC	10V DC or more														
24V DC	20V DC or more														
NPN open collector pulse output (Z□T-MR)	Pulse specification Cable	Maximum load: 24V DC 6mA DC Duty ratio 2 : 8 < ON : OFF < 8 : 2													
		Lead cable length: Approx 480mm 3-wire AWG26 Flat cable													
		Lead cable length: Approx 600mm 4-wire AWG26 Flat cable													
Pulse unit		0.46mL/P	2.5mL/P	0.46mL/P	2.5mL/P										
Maximum frequency(@ accuracy guaranteed maximum flow)		Approx 31Hz	Approx 34Hz	Approx 31Hz	Approx 34Hz										
Minimum pulse ON time		Approx 6.5 ms	Approx 6 ms	Approx 6.5 ms	Approx 6 ms										
Power supply		3~24VDC In case of open collector pulse output, applied voltage of sensor power supply (Red-Black) and of pulse output (Blue-White-Black) shall be the same. ※2													
Consumption current		8.4mA or less													
Installation position		Position that the nameplate is vertical to the floor (Air intrusion shall be avoided.)													
Protection structure		Indoor use (IPX4 equivalent)													
Connection		R1/4	R1/2	R1/4	R1/2										
Weight		Approx 100g	Approx 140g	Approx 100g	Approx 140g										
Main materials of wetted part	Case	PPS													
	Rotor	PPS													
	O-ring	NBR		FKM											
	Shaft	SUS304		SiC											

- For the details of material marks, refer to the back cover.
- If a fluid can get mixed with particles, install a filter of which mesh is #80 or more at an upstream side of flowsensor.
- Measurement of gasoline, sodium hydroxide (Caustic soda), hydrogen peroxide solution (Oxydol) and hydrochloric (strong acid) is not allowed.
- For the viscosity unit, refer to the back cover.
- Make sure to confirm product specification before usage.
- ※1: For weak acid and alkaline fluids, please confirm corrosion resistance of main materials of wetted part.
- ※2: In case applied voltage of sensor power supply and pulse output is not the same, performance and output can be unstable.

### Application examples

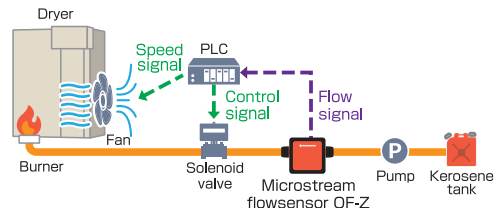
#### 1. For flow check of lubrication oil

Combination use of a flowsensor and PLC can detect clogging in a lubrication oil pipe and avoid machine breakdown.



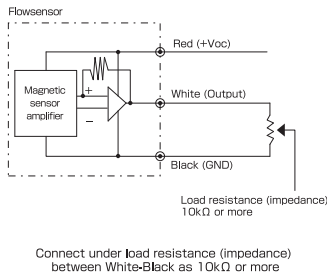
#### 2. For monitoring of dryer's kerosene

Combination use of a flowsensor, a pump, a solenoid valve, PLC can control dried condition inside a dryer by controlling fan speed in accordance with kerosene supply amount.

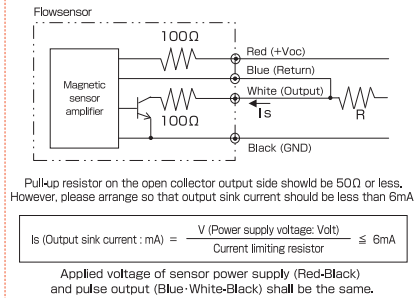


### Wiring instruction

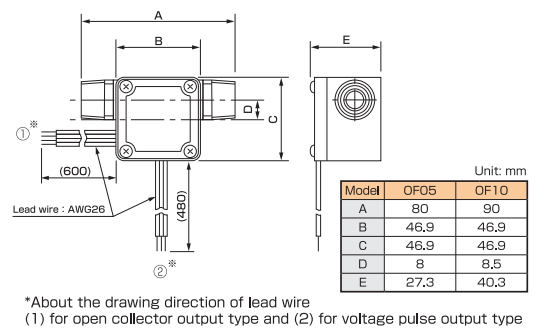
#### 【Voltage pulse output】(Z□T-AR)



#### 【NPN open collector pulse output】(Z□T-MR)



### External dimensions



Manufactured and Distributed by

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To Our Customers

Please understand that product specifications may be changed without notice in order to improve performance. We are always happy to provide the latest catalogs and brochures, and respond to inquiries made to our offices.

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Technical specifications in this catalog are up-to-date as of June 2020.