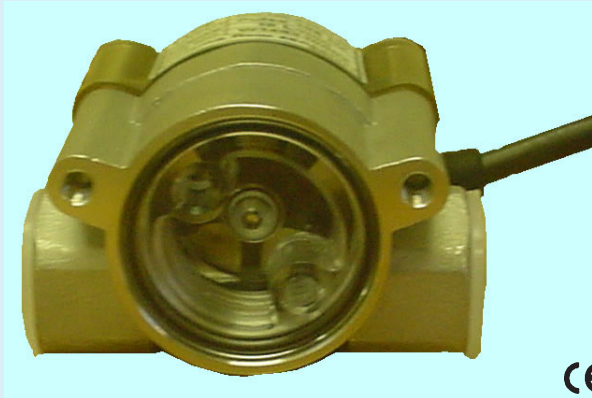


MW-100

Feature rich flowmeter and switch with in-line flow



- Wide flow rangeability
- Outstanding accuracy
- State-of-the-art electronics - high reliability
- 0-5 VDC, or pulse output
- Visual indication
- Small footprint
- CE marking

Tangential turbine flowmeters continue to be the most common way to measure flow electronically in a wide range of industries. Enhancements to tangential turbine flowmeter systems are producing a flow-sensing device that is smaller, easier to install, and more accurate than ever before. Malema manufactures a line of Tangential Turbine (also called Paddle Wheel) Flowmeters that utilize sophisticated circuitry to foster signal conditioning.

Operating Principle

The rotational velocity of the rotary wheel varies linearly with the average velocity of the fluid flowing through the flowmeter. A square wave pulse is generated by a Hall Effect from magnets embedded in the vanes of the rotor wheel. Depending on the output version of the MW-100, the pulse signal is relayed directly or converted to a 0-5 VDC (voltage) output. The voltage model is span-adjustable over the flow range of the unit.

Applications

- Cooling systems
- Laser equipment

Custom Version Available

Malema welcomes the opportunity to apply its flow sensor experience to work for its customers. Please contact the factory for any special requirements; such as ports, extreme temperature and pressure capabilities, etc....

Material Versions

- 316 Stainless Steel

Other material available upon request

Calibration range

1/4"	0.6 to 3 l/min
	0.6 to 5 l/min
3/8"	1 to 10 l/min
	2 to 20 l/min
3/4"	5 to 50 l/min
	8 to 80 l/min
	10 to 100 l/min

Port size

- 1/4" FNPT or Rc
- 3/8" FNPT or Rc
- 3/4" FNPT or Rc

Specifications

Set Point Accuracy	± 3 % Full Scale
Hysteresis	6 %
Repeatability	± 0.5 %

Standard Specifications

Measuring fluid	Cooling water or low viscosity liquids (less than 2 mPs)
Maximum Operating Pressure	1.0 MPa at 25 °C
Ambient/ Fluid Temperature	0 to 50 °C (Without freezing)
Mass (approx.)	Ranges: 01 - 04: Approx. 0.20 kg
	Ranges: 05 - 07: Approx. 0.38 kg
Accuracy	± 3 % F.S.
Connection size	Rc thread (Std.) Refer to the MODEL CODE for more details
Scale range	Refer to the Model Code for more details
Relay Life Time	Mechanical at 180 per cycles per seconds - 10 ⁸ cycles
Mounting Holes (All Units)	2-M4 x 10
Viscosity	< 2 mPa.S

Functions

Model	Output	Power Supply	Construction	Electrical Connection
Pulse	Open Collector Pulse (Unscaled Pulse) Load Rating: Max. 24 VDC, 15 mA	DC 12 - 24 VDC, 50 mA	IP65 equivalent	4-core equivalent AWG28 (1m)
Voltage	0 - 5 VDC Load Rating: More than 100Ω	DC 12 VDC ± 10%, 50 mA	IP65 equivalent	4-core equivalent AWG28 (1m)
Pulse + Relay	Open Collector Pulse (Unscaled Pulse) Load Rating: Max. 24 VDC, 15 mA Alarm output: 1 point relay contact (SPDT) Alarm setting: Freely adjustable by adjustment knob between 10% to 100% of maximum rating flowrates Setting rating: 24 VDC, 100 mA or less Reset span: 5% of max flow rate or less	DC 24 VDC ± 10%, 50 mA	IP64 equivalent	6-core equivalent AWG28 (1m)
Voltage + Relay	0 - 5 VDC + relay Load Rating: More than 100Ω Alarm output: 1 point relay contact (SPDT) Alarm setting: Freely adjustable by adjustment knob between 10% to 100% of maximum rating flowrates Setting rating: 24 VDC, 100 mA or less Reset span: 5% of max flow rate or less	DC 24 VDC ± 10%, 50 mA	IP64 equivalent	6-core equivalent AWG28 (1m)

Pressure Loss and Diameter of Flow Path

Range	ΔP (kPa)*	Diameter of flow path (mm)
02	5	6
03	15	6
04	10	8
05	20	10
08	5	15
09	2.5	18
10	5	20

* at max flow

Material of Construction

Name	Material
Body	Cast 316 SS
Wheel	Nylon 12
Bushing	M250 - Engineering plastic
Shaft	HC-276
Bearing	POM - Polyacetal
Window	Acrylic
O-ring	NBR
Cover	ABS
Cable	PVC coating

Installation and Maintenance

The MW-100 Rotary Flowmeter may be installed horizontally or vertically, but the axis of the rotor should be parallel to the ground. No special field maintenance is required. If necessary, the flowmeter is easily disassembled and cleaned. For more detailed directions, please refer to our "Installation and Maintenance" sheet.

Certifications

CE Compliance

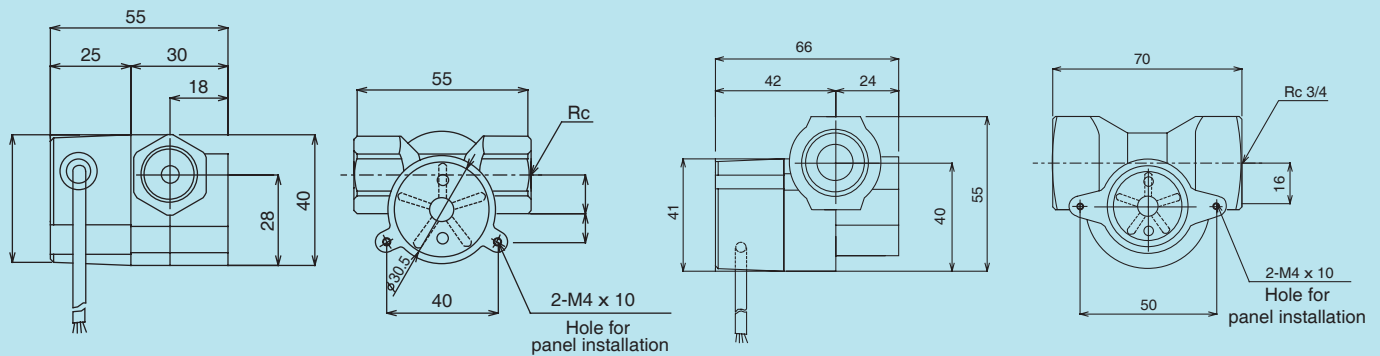
Only the MW-100 with Voltage and Pulse outputs meet the intent of Directive 89/336/EEC for Immunity and Low Voltage Directive 73/23/EEC for Product Safety.

Ordering Information

Standard Part Numbering							Option			
MW	-	Model	-	Material	Port	Range	Output	-	Window	Seals
MW	-	100	-	S	2	01	1	-	0	0
		100		S - 316SS	2 - 1/4" 3 - 3/8" 6 - 3/4"	02 - 0.6 ~ 3 l/m 03 - 0.6 ~ 5 l/m 04 - 1 ~ 10 l/m 05 - 2 ~ 20 l/m 08 - 5 ~ 50 l/m 09 - 8 ~ 80 l/m 10 - 10 ~ 100 l/m	1 - 0 to 5 VDC 3 - Pulse 4 - Pulse + Relay 5 - 0 to 5 VDC + Relay	-	0 - Standard (acrylic)	0 - Standard (NBR)

* Standard is NPT, Rc is available upon request.

Dimensional Drawings



Wiring

Voltage

Color	
Gray	V out (-)
White	V out (+)
Black	Power supply (-)
Red	Power supply (+)
Black (thick)	Shield

Pulse

Color	
Gray	Ground
White	Pulse out
Black	Power supply (-)
Red	Power supply (+)
Black (thick)	Shield

Voltage + Relay

Color	
Blue	V out (-)
Yellow	V out (+)
Black	Power supply (-)
Red	Power supply (+)
Orange	Normally open
Green	Normally close
Brown	Common
Black (thick)	Shield

Pulse + Relay

Color	
Yellow	Pulse out
Black	Power supply (-) Ground
Red	Power supply (+)
Orange	Normally open
Brown	Normally close
Green	Common
Black (thick)	Shield