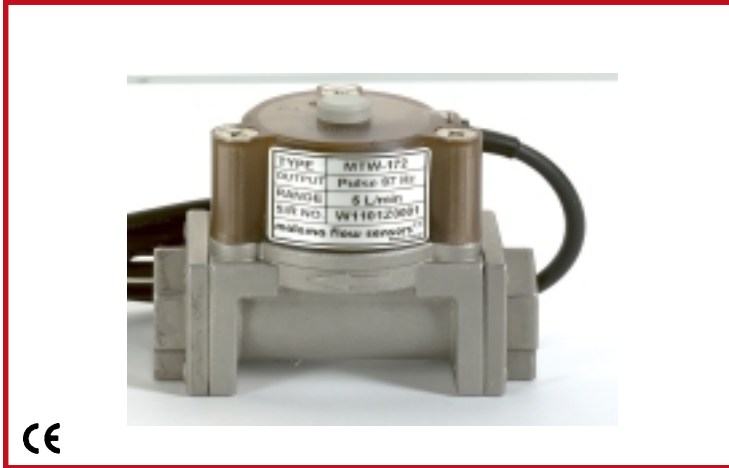


# Turbine Flowmeter



Tangential turbine flow meters continue to be the most common way to measure flow electronically in a wide range of industries. Enhancements to tangential turbine flow meter 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) Flow meters that utilize sophisticated circuitry to foster signal conditioning.

## Operation

The rotational velocity of the rotary wheel varies linearly with the average velocity of the fluid flowing through the flow meter. A square wave pulse is generated by a Hall Effect from magnets embedded in the vanes of the rotor wheel. The pulse signal can be converted to a 0 - 5 VDC analog output and/or SPDT relay.

## Custom Versions 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. Malema also designs custom manifolds for customers with special requirements.

## MTW-100 Series

### Turbine Wheel Flowmeter

#### Features

- Available in five flowrate ranges - capable of measuring flows from 0.2 to 20 liters/min (5.2 GPM)
- Cast stainless steel construction insures compatibility with a wide range of fluids for a very economical price.
- Highly accurate - all MTW series flowmeters provide +/- 3% full scale linearity
- Flow switch functionality - easy access filed adjustable relay tp provide a single flow alarm contact closure available as an option
- Compact size - ideally suited for use in constrained spaces.

#### Applications

- Semiconductor applications

#### Specifications

Accuracy:	±3% Full Scale
Repeatability:	0.5 %

#### Material Versions

- 316 Stainless steel

#### Port Sizes

- 1/4" FNPT\*
- 3/8" FNPT\*

\* Rc available on request

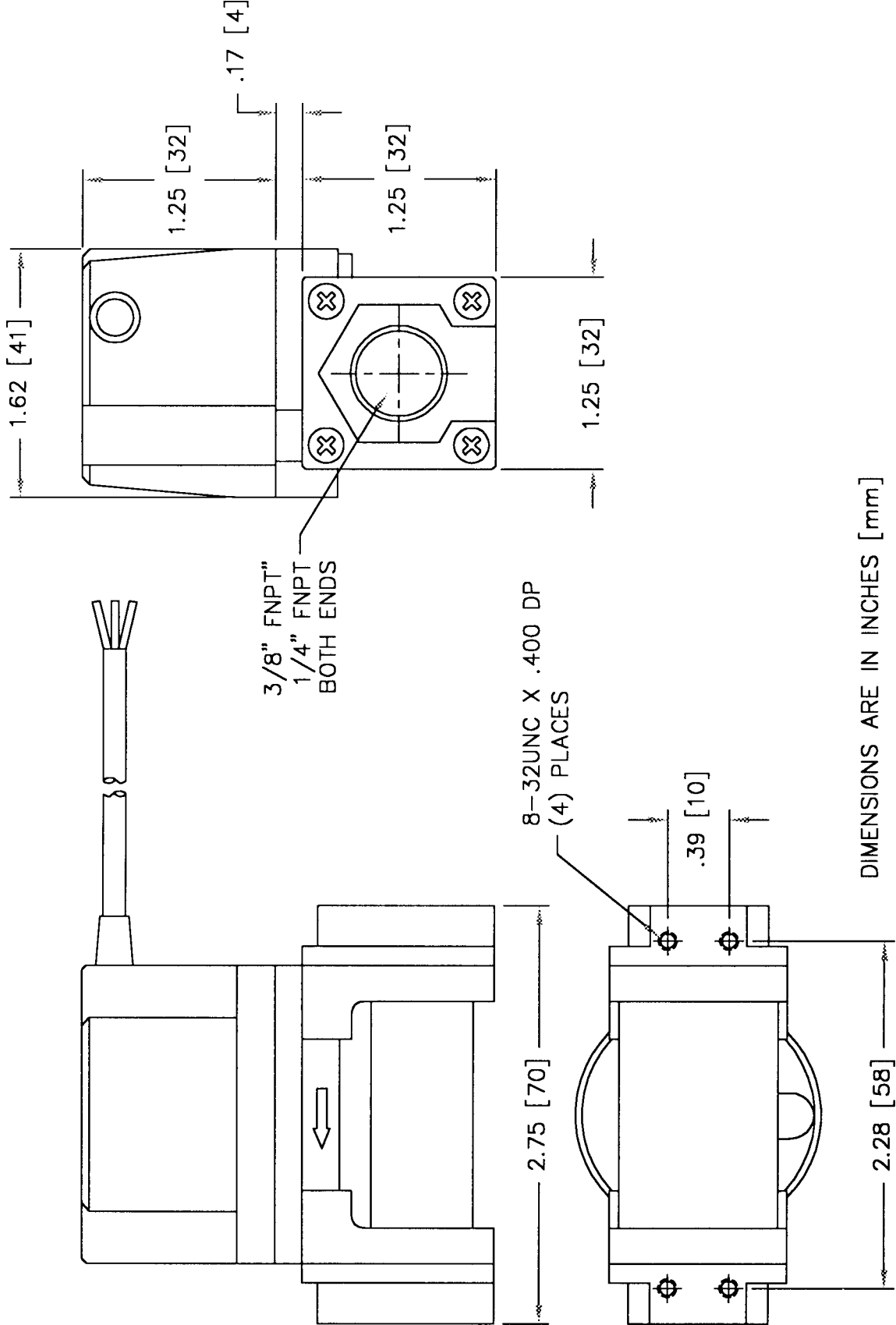
## General Specifications

Flow Range (Liters/minute)	Maximum Pressure Drop (PSID)	Port Size (In) FNPT
0.2 to 2.0	5.8	1/4
0.3 to 3.0	4.6	1/4
0.5 to 5.0	2.9	1/4
1.0 to 10	1.6	3/8
2.0 to 20	2.6	3/8

Accuracy	+/- 3 % Full scale
Repeatability	+/- 0.5% Full scale
Wetted Material	Housing: 316 cast stainless steel Rotor: Nylon-12 with ferrite impregnation Shaft: Zirconium Oxide Bearings: Zirconium Oxide Turbine Guide: PBT O-ring: Nitrile Window: Acrylic
Enclosure	IP64 (NEMA 3)
Weight	0.73 lbs(0.33 Kg)
Output Signal	Open Collector (with optional SPDT relay) Analog (0 - 5 VDC, with optional SPDT relay)
Relay Contact Rating	1A @ 30 VDC 0.5A @ 125 VAC
Power Input	12 to 24 VDC, 50 mA
Fluid Temperature Range	32 to 122 Deg F (0 to 50 Deg C)
Ambient Temperature Range	32 to 122 Deg F (0 to 50 Deg C)
Maximum Operating Pressure	145/435 psi (1.0/3.0 Mpa)
Viscosity	30 cP
Agency Certifications	CE

# Turbine Flowmeter

## Dimensional Drawing



## Wire Color Definitions

Wire Color	Pulse	Voltage	Voltage & Relay	Pulse & Relay
Gray	Pulse OUT (-) GND	V (-) OUT	Common	Common
White	Pulse OUT (+)	V (+) OUT	-	-
Black	Vin (-) GND	Vin (-) GND	Vin (-) GND	Vin (-) GND
Red	Vin (+)	Vin (+)	Vin (+)	Vin (+)
Black(thick)	Shield	Shield	Shield	Shield
Green	-	-	Normally Closed	Normally Closed
Orange	-	-	Normally Open	Normally Open
Yellow	-	-	V - OUT	Pulse OUT

## Ordering Information

Standard Part Numbering								Options		
MTW	-	Model	-	Material	Port	Range*	Output	-	0	Seals
MTW	-	100	-	S	2	01	1	-	0	0
		100		S - 316 Stainless	2 - 1/4" 3 - 3/8 "	01 - 0.2 - 2 l/m 02 - 0.3 - 3 l/m 03 - 0.5 - 5 l/m 04 - 1 - 10 l/m 05 - 2 - 20 l/m	1 - Voltage 3 - Pulse 4 - Pulse & Relay 5 - Voltage & Relay		0	0 - Nitrile