

Industrial Micro Oval Gear

Model: MDGM2

Applications

- Universal measuring principle for liquids
- Hydraulic and high viscosity liquid
- The Oval gear measuring principle is used in a wide range of different branches of industry, chemicals, petrochemicals, oil and gas, food, and – no less importantly – in custody transfer applications. It can measure virtually all fluids: cleaning agents, latex, fuels, crude oil, vegetable oils, animal fats, solvents, silicon oils, fruit solutions, toothpaste, vinegar, alcohol, ketchup, mayonnaise



Special features

- Large indicator with totalizer and batch control
- Flow measurement up to 1000 L/h
- Process pressures up to 1000 bar
- Fluid temperature up to 250 °C
- Communication MODBUS RS485
- Gear material, aluminium, 316 L, Hastelloy C, hastelloy B, Titanium, Tantalum



Description

- **Accuracy class** 0.5% - 0.2% of rate
- **Flow unit** liter, m³, metric Ton or USG per second, minute or hour (the user must specify the required flow unit while ordering); also percent of the measurement range may be displayed
- **Ambient Temperature** Sensor: -40 ~ 80°C, Converter: -15 ~ 50°C
- **Gear materials** Aluminium, 316L, Hastelloy C, Hastelloy B, Ti, Ta, Pt/Iridium alloy, Stainless steel, painting tungsten carbide
- **Chamber material** Aluminium, 316L, Hastelloy C, Hastelloy B, Ti, Ta, Pt/Iridium alloy, Stainless steel, painting tungsten carbide
- **Shaft material (medium pressure)** Stainless steel 316
- **High pressure** Bear, ball - PEEK Bears
- **Nominal diameter** 1/8 female to 2 inch
- **Communication** Rs485
- **Output signal** 4 - 20 mA, Pulse or alarm (option)
- **Frequency output** 1...5000 Hz, 36 VDC max. & 250 mA max.
- **Pulse Output Eq. Wt.** 0.001~1.000 m³/p, 0.001~1.000 l/p, 0.001~1.000 US gal/p, 0.001~1.000 Ton/p
- **Max. Pulse Output** 40000 P/L
- **Pulse Output Width** Can be set by the user
- **Alarm Outputs** High & Low limits, Transistor output, maximum 250 mA @ 36 VDC
When high and low limits are reached a bell-like icon will be displayed on the
- **LCD display** Large LED with batch control, Alarm display

MDGM2 Series

Designed from DN 1/2 inch to 2 inch in size with a flow range of 150ml/min to 1000 L/min, these meters are factory-configured and calibrated to international standards to provide the user with assurance of both quality and performance of the meter. A calibration certificate is included with each flowmeter shipped to the users.

Pressure Class Selection

Code	Pressure Class	Code	Pressure Class	Code	Pressure Class
P2	2 MPa	P8	10 MPa	P14	60 MPa
P4	3 MPa	P10	16 MPa	P16	100 MPa
P6	6 MPa	P12	25 MPa	Cu	Customer

Diameter selection

Model	Connection	Rated Pressure (Bar)	Minimum / Maximum (Flow)
M1	G 1/8	32	1...200ml/min
M2	G 1/8	32	3...300, 1...400 ml/min
M3	G 1/8	32	2...800, 5...800ml/min
M4	G 1/8-1/4	32	0.5...100L/h
M5	G 1/4	32	6...600L/h
M6	G 1/2	32	0.3...30L/min
M7	G 1	32	0.5...100L/min
M8	G 1 1/2	32	1...250L/min
M9	G 2	32	1...500L/min
M10	G 2 1/2	32	2...1000L/min



MDGM2 Oval Gear Flow Meter

ORDERING CODE	Example: MDGM 2	M6	F	D	L	B1	L	A	U	N	D	I	T1	P8	N
Nominal Diameter please see the diameter selection table															
Please specify		M6													
Process Connection															
F - Flange			F												
S - Sanitary															
W - Screw															
O - Other															
Flang Type															
D - DIN Please specify PN				40											
A - ASME Please specify class															
C - Customer															
Converter - Indicator															
L - Local indication					L										
W - Wall - Mounting box converter - Indicator															
Body Material															
B1 - Aluminium						B1									
B2 - 316 Stainless steel															
C - Customer															
Gear Material															
A - Aluminium															
L - 316L Stainless steel															
H - Hastelloy C															
B - Hastelloy B															
T - Titanium							L								
M - Monel															
P - Pt / Iridium alloy															
O - Other															
Accuracy															
A - 0.5%								A							
B - 0.3%															
C - 0.2%															
Out Put															
N - Not required															
U - 4 ~ 20 mA. Frequency / pulse									U						
M - Modbus RS485															
Shaft material															
A - Aluminium										N					
S - Stainless Steel 304															
T - Stainless Steel 316															
H - Hastaloy															
B - Bear, ball															
P - PEEK Bears															
Power Supply															
A - 85 ~ 250 VAC															
D - 20 ~ 36 VDC											D				
B - Battery power															
Z - Dual power (battery and 24 VDC)															
Protection Grade															
I - IP 54												I			
P - IP 65															
E - IP 68 Explosion - proof															
Temperature Rating															
T1 - (-20...80°C)													T1		
T2 - (-20...120°C)															
T3 - (-20...150°C)															
T4 - (-50...250°C)															
Pressure Rating please see the Pressure Class Selection															
Please specify														P8	
Infrared Remote Control															
N - Not required															N
R - Required															



■ PLEASE SUPPLY THE FOLLOWING INFORMATION WHEN YOU INQUIRE.

(Fill in the form below to the extent possible. Further details will be finalized in later consultation.)

- Fill in the blanks. Tick the boxes that apply.

1. Sensor unit	
2. Process fluid (※1)	Name: _____ SP. gr : _____ Viscosity : _____ Concentration : _____ %
3. Flow range	Maximum _____ Normal _____ Full scale _____ <input type="checkbox"/> kg/h <input type="checkbox"/> Others _____
4. Fluid temperature	Maximum _____ °C Normal _____ °C Min. _____ °C
5. Operating pressure	Maximum _____ MPa Normal _____ MPa Min. _____ MPa
6. Ambient temperature	Maximum _____ °C Min. _____ °C
7. Fluid flow direction	<input type="checkbox"/> Left→Right <input type="checkbox"/> Right→Left <input type="checkbox"/> Bottom→Top (<input type="checkbox"/> Top →Bottom) Orientation: See sketch on page 23.
8. Nominal size	_____ mm or _____ inch
9. Required accuracy	± _____ % of reading ± _____ % of full scale
10. Process connection	<input type="checkbox"/> Flanged connection (Flange rating) <input type="checkbox"/> Ferrule connection <input type="checkbox"/> Screw connection
11. Explosionproof	<input type="checkbox"/> Not required <input type="checkbox"/> TIIS <input type="checkbox"/> ATEX <input type="checkbox"/> IECEx <input type="checkbox"/> KCs <input type="checkbox"/> CSA <input type="checkbox"/> EAC <input type="checkbox"/> NEPSI <input type="checkbox"/> ITRI
12. Power supply	V <input type="checkbox"/> AC <input type="checkbox"/> DC
13. Output specifications	Pulse output
	<input type="checkbox"/> Volt. pulse: [0]: 1.5V [1]: 13VDC min. Out. impedance: 2.2kΩ
	<input type="checkbox"/> Open drain output (equivalent to open collector output) [Min.10V to Maximum 30V, 50mADC, ON resistance 0.6Ω or less]
	<input type="checkbox"/> Output frequency: Any point from 0.1 to 10000Hz at full scale
	Two outputs from flow rate (mass or volume).
Analog output	4 to 20mADC Maximum load: 500Ω
	2 outputs from instant. flow rate (mass, volume), temp. or density (option)
Additional damping	0 to 200s. (variable)
Alarm output	Slug flow High _____ g/mL Low _____ g/mL
14. Communication protocol	<input type="checkbox"/> HART <input type="checkbox"/> FOUNDATION fieldbus <input type="checkbox"/> PROFIBUS <input type="checkbox"/> Modbus (Address: _____)
15. Transmission length	Sensor unit (_____) m Transmitter (_____) m Receiving instrument
16. Receiver	<input type="checkbox"/> Totalizer <input type="checkbox"/> Indicator <input type="checkbox"/> Recorder <input type="checkbox"/> Flow controller <input type="checkbox"/> Batch controller <input type="checkbox"/> Density computer <input type="checkbox"/> Computer <input type="checkbox"/> Others
17. Dedicated cable length	In case of Remote-mount type _____ m
18. In case of separate type transmitter	<input type="checkbox"/> Stanchion type w/bracket and 2" U bolt
19. No. of units required	
20. Application	
21. Other considerations	
22. Cable gland	<input type="checkbox"/> Standard <input type="checkbox"/> ATEX directive compliant <input type="checkbox"/> ATEX directive compliant for earthed cable
23. Maritime certification	



Address: 7191 Yonge street, Toronto, Canada

Tel: +16472221281(5 line)

Web: www.madecotech.com

Email: Info@madecotech.com