

Coriolis Mass Flow meter

Model: MDCM1

Applications

- Universal measuring principle for liquids and gases
- Multivariable measurement – simultaneous measuring of mass flow, density, temperature and viscosity
- The Coriolis 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. Coriolis flowmeters 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

- High accuracy class coriolis mass flow meter
- Flow measurement up to 1000 t/h
- Process pressures up to 320 bar
- Fluid temperature up to 350°C
- Communication HART, PROFIBUS DP/PA, FOUNDATION Fieldbus, MODBUS RS485
- Sensor materials, 316 L, Hastelloy C, Hastelloy B, Titanium, Tantalum



Description

- **Accuracy class** 0.2% - 0.1% or 0.05% of rate
- **Density measurement acc** 0.002 g/cm³, 0.001 g/cm³
- **Flow unite** liter, m³, metric Ton or USG per second, minute or hour (the user should specify the required flow unit while ordering);
- **Ambient Temperature** Sensor: -40 ~ 80°C, Converter: -15 ~ 50°C
- **Sensor materials** 316L, Hastelloy C, Hastelloy B, Ti, Ta, Pt/Iridium alloy, 304 Stainless steel, painting tungsten carbide
- **Nominal diameter** DN 4 mm to DN 250 mm
- **Communication** Rs485 (Modbus protocol), HART, PROFIBUS DP/PA, FOUNDATION Fieldbus
- **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
- **Pulse Output** 100 p/s max., 36 VDC & 250 mA max.
- **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 display
- **Load resistance** 4 - 20 mA, 0 - 500Ω
- **LCD display** Instantaneous flow, Flow velocity, Percentage, Empty pipe ratio, Forward and reverse accumulation, Alarm display

MDCM1 Series

Designed from DN 1,5 mm to 200 mm in size with a flow range of 4 kg to 500 t/h, these meters are factory-configured and calibrated according to the 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	16 MPa	P14	30 MPa
P4	4 MPa	P10	20 MPa	P16	35 MPa
P6	6 MPa	P12	25 MPa	Cu	Customer

Diameter selection

Model	Tube Diameter (mm)	Connection	Rated Pressure (Bar)	Minimum / Maximum Flow (kg/h)		Model	Tube Diameter (mm)	Connection DIN	Rated Pressure (Bar)	Minimum / Maximum Flow (t/h)	
Micro Type						Flange Type					
M1	1.5	Screw	320	0	4	M9	10	10	40	0	0.05
M2	3	Screw	320	0	40	M10	15	15	40	0	1
M3	6	Screw	250	0	100	M11	20	20	40	0	3
M4	8	Screw	250	0	200	M12	25	25	40	0	10
Medum Type						M13	40	40	40	0	20
M5	12	Screw	250	0	500	M14	50	50	40	0	30
M6	14	Screw	250	0	1000	M15	65	65	40	0	50
M7	16	Screw	250	0	3000	M16	80	80	40	0	100
M8	25	Screw	250	0	10000	M17	100	100	40	0	150
Customer						M18	150	150	40	0	300
						M19	200	150	25	0	500
MC	XX	XX	XXX	XXX		M20	250	250	25	0	1000



MDCM 1 Coriolis Mass Flow meter

ORDERING CODE	Example: MDCM 1	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 - Carbon steel						B1									
B2 - 304 Stainless steel															
B3 - 316 Stainless steel															
Wet Part Material															
L - 316L Stainless steel															
H - Hastelloy C															
B - Hastelloy B															
T - Titanium															
A - Tantalum							L								
M - Monel															
P - Pt / Iridium alloy															
O - Other															
Accuracy															
A - 0.2%								A							
B - 0.1%															
C - 0.05%															
Out Put															
N - Not required															
U - 4 ~ 20 mA. Frequency / pulse									U						
M - Modbus RS485															
Digital Communication															
N - No Communication										N					
M - Modbus RS485															
H - Hart															
F - Foundation fieldbus															
P - Profibus DP/PA															
G - GPRS															
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 65														I	
P - IP 68															
E - IP 68 Explosion - proof															
Temperature Rating															
T1 - (-50...150°C)															T1
T2 - (-50...250°C)															
T3 - (-50...350°C)															
T4 - (-200...150°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	CA	
2. Process fluid	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)	
8. Nominal size	_____ mm or _____ inch	
9. Required accuracy	± _____ % of reading ± _____ % of full scale	
10. Process connection	<input type="checkbox"/> Flange connection (Flange rating) <input type="checkbox"/> Ferrule connection <input type="checkbox"/> Screw connection	
11. Explosion proof	<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
	Analog output	Two outputs from flow rate (mass or volume). 4 to 20mADC Maximum load: 500Ω
	Additional damping	2 outputs from instant. flow rate (mass, volume), temp. or density (option) 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	
15. Transmission length	Sensor unit (_____) m	Transmitter (_____) m
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		



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