

DESCRIPTION

The RWG and RWBG Series meters are wafer-style in-line flow meters designed for high accuracy measurements with extremely low pressure drop. The meters have no moving parts and are virtually maintenance-free after installation. The RWG series is suitable for most gas types. The RWBG series is similar in construction but optimized for low pressure BioGas applications; typically CH₄ + CO₂ mixtures. All meters are loop-powered devices with standard HART® communications for ease of field programming and system integration.

APPLICATION

- Combustion air
- Compressed air
- Incineration gas
- Natural gas
- Nitrogen
- Digester gas (BioGas: CH₄ + CO₂)
- Chemical processing

FEATURES

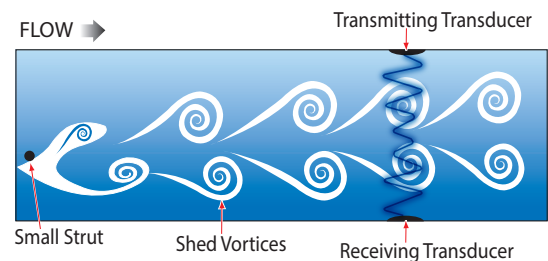
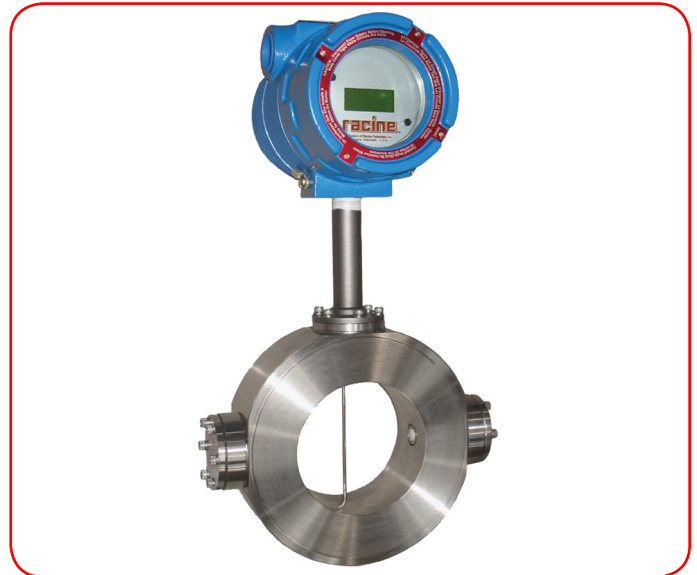
- Low pressure drop
- NIST traceable calibration
- HART communication protocol

OPERATION

An everyday example of a vortex shedding phenomenon is a flag waving in the breeze: the flag waves due to the vortices shed by wind moving across the flagpole. Within the flow meter, as flowing media moves across the strut or “bluff bar,” vortices are also shed, but on a smaller scale. The meter transmits an ultrasonic beam through the vortex pattern downstream of the strut. As vortices are shed the carrier wave of the ultrasonic signal modulates. The modulation of the carrier wave is measurable and proportional to the number of vortices shed. Digital processing enables the vortices to be counted, and this value is converted into a velocity. Software converts velocity into a volumetric flow rate, in units of measure selected by the operator.

Vortex flow meters use the smallest strut in the industry, which allows for high levels of sensitivity, superior performance at low flow rates, high turndown ratios and low pressure drop.

Through the use of an internal RTD and an optional external pressure sensor, the flow meter software compensates for changes in pressure and temperature to achieve an accurate mass flow measurement.



PRESSURE DROP

Size	Inches H ₂ O		kPa	
	Air	CH ₄	Air	CH ₄
0.5	12	7	3	1.7
1.0	5	2.7	1.2	0.7
1.5	2.3	1.3	0.6	0.3
2.0	2.7	1.2	0.7	0.4
3.0	1.3	0.7	0.3	0.2
4.0	0.5	0.3	0.13	0.07

All pressures listed are at full flow (1 STP)

OPTIONS

- 2-line, 8-digit rate/totalizer display
- Integral RTD temperature compensation for mass flow measurement
- Remote mount electronics
- Wafer body suitable for DN Flange installation

FLOW RANGES

Pipe Size	0 psig (0 barg)		25 psig (1.7 barg)		50 psig (3.4 barg)		75 psig (5.2 barg)		100 psig (6.9 barg)		150 psig (10.3 barg)		200 psig (13.8 barg)		250 psig (17.2 barg)	
	Min. SCFM (Nm ³ /hr)	Max. SCFM (Nm ³ /hr)	Min. SCFM (Nm ³ /hr)	Max. SCFM (Nm ³ /hr)	Min. SCFM (Nm ³ /hr)	Max. SCFM (Nm ³ /hr)	Min. SCFM (Nm ³ /hr)	Max. SCFM (Nm ³ /hr)	Min. SCFM (Nm ³ /hr)	Max. SCFM (Nm ³ /hr)	Min. SCFM (Nm ³ /hr)	Max. SCFM (Nm ³ /hr)	Min. SCFM (Nm ³ /hr)	Max. SCFM (Nm ³ /hr)	Min. SCFM (Nm ³ /hr)	Max. SCFM (Nm ³ /hr)
1/2 in. (12.7 mm)	0.4 (1)	16 (27)	1 (2)	43 (73)	2 (3)	70 (120)	2 (4)	81 (138)	3 (5)	81 (138)	4 (8)	81 (138)	6 (10)	81 (138)	7 (12)	81 (138)
1 in. (25.4 mm)	1 (3)	45 (76)	3 (6)	122 (207)	6 (9)	198 (337)	8 (13)	275 (467)	10 (17)	351 (597)	14 (24)	498 (846)	18 (31)	498 (846)	23 (38)	498 (846)
1-1/2 in. (38.1 mm)	3 (4)	100 (170)	7 (11)	270 (459)	11 (19)	440 (748)	15 (26)	610 (1037)	20 (33)	780 (1326)	28 (48)	1121 (1904)	37 (62)	1229 (2089)	45 (77)	1229 (2089)
2 in. (50.8 mm)	5 (9)	200 (340)	14 (23)	540 (918)	22 (37)	880 (1496)	31 (52)	1221 (2074)	39 (66)	1561 (2652)	56 (95)	1991 (3384)	73 (124)	1992 (3384)	90 (153)	1992 (3384)
3 in. (76.2 mm)	10 (17)	400 (680)	27 (46)	1080 (1836)	44 (75)	1761 (2992)	61 (104)	2441 (4148)	78 (133)	3122 (5305)	112 (190)	4247 (7217)	146 (248)	4247 (7217)	180 (306)	4247 (7217)
4 in. (101.6 mm)	20 (34)	600 (965)	54 (92)	1621 (2754)	88 (150)	2641 (4488)	122 (207)	3662 (6223)	156 (256)	4683 (7957)	224 (381)	6724 (11426)	292 (496)	7898 (13420)	360 (612)	7898 (13420)

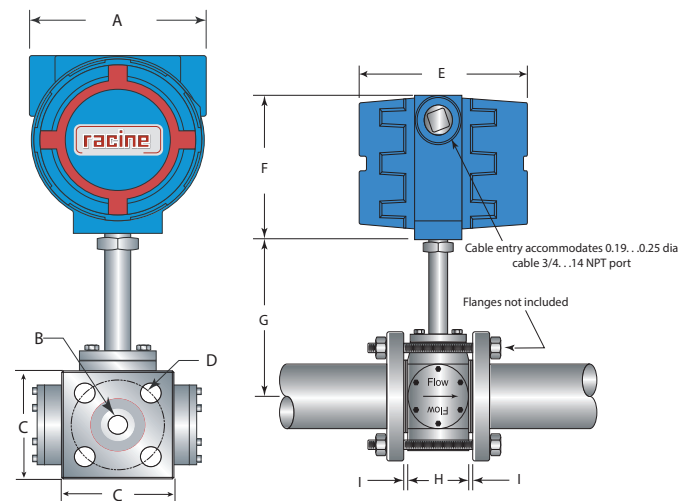
Based on air, 60° F (16° C)

SPECIFICATIONS

Measured Fluids	Gas
Flow Ranges	0.4...16 acfm, 20...600 acfm
Accuracy	±1% of reading over the upper 90% of the flow range
Repeatability	0.5% of reading
Construction	Stainless steel wetted parts with ceramic transducers (Teflon® in RWBG Series), Viton® O-rings; NEMA 7 XP enclosure standard
Environment	Operating Temp. -20...360° F (-28...182° C)
	Ambient Temp. -20...155° F (-28...68° C)
	Operating Pressure -5...250 psig (-0.34...17.2 barg)
Input Power	24V DC
Signal Output	2-wire, 4...20 mA loop
Communications	HART® Protocol (via PC with HART modem)
Certifications	CE: EN61326-1:2002 Optional Intrinsically Safe conforms to: ATEX II 2G Ex ib IIB T4 Zone 1 Group IIB T4 (Canada) and AEx ib IIB T4 (USA)

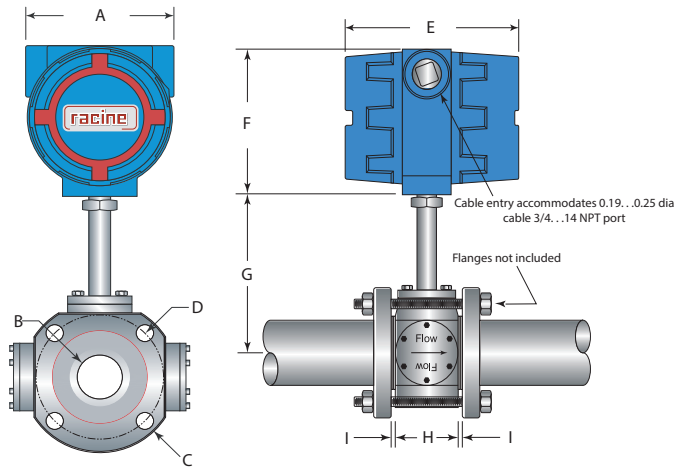
DIMENSIONS

Model RWG/RWBG05



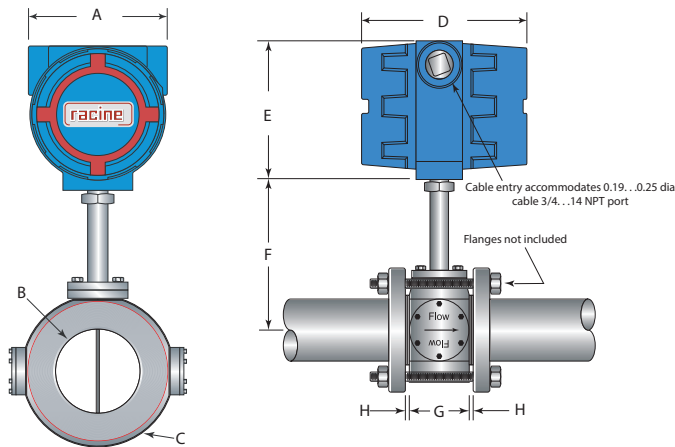
Meter Size in. (mm)	A in. (mm)	B in. (mm)	C in. (mm)	D in. (mm)	E in. (mm)	F in. (mm)	G in. (mm)	H in. (mm)	I in. (mm)
1/2 (12.7)	4.5 (114.3)	0.5 (12.7)	2.9 (73.7)	2.4 (61)	5.8 (147.3)	4.8 (121.9)	2.4 (61)	2.3 (58.4)	0.06 (1.5)

Models RWG/RWBG10 and RWG/RWBG15



Model	Meter Size in. (mm)	A in. (mm)	B in. (mm)	C in. (mm)	D in. (mm)	E in. (mm)	F in. (mm)	G in. (mm)	H in. (mm)	I in. (mm)
10	1 (25.4)	4.5 (114.3)	0.9 (22.9)	4 (101.6)	3.1 (78.7)	5.8 (147.3)	4.8 (121.9)	2.4 (61)	2.3 (58.4)	0.06 (1.5)
15	1-1/2 (38.1)	4.5 (114.3)	1.4 (35.6)	4.7 (119.4)	3.9 (99.1)	5.8 (147.3)	4.8 (121.9)	2.4 (61)	2.3 (58.4)	0.06 (1.5)

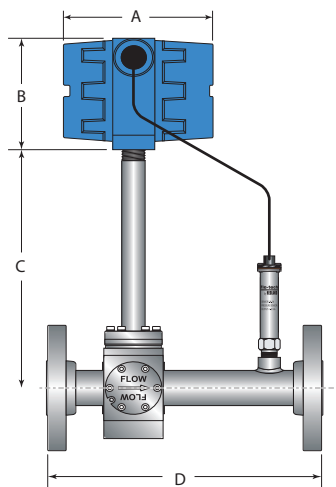
Models RWG/RWBG20, RWG/RWBG30 and RWG/RWBG40



Model	Meter Size in. (mm)	A in. (mm)	B in. (mm)	C in. (mm)	D in. (mm)	E in. (mm)	F in. (mm)	G in. (mm)	H in. (mm)
20	2 (50.8)	4.5 (114.3)	1.8 (45.7)	4 (101.6)	5.8 (147.3)	4.8 (121.9)	2.4 (61)	2.3 (58.4)	0.06 (1.5)
30	3 (76.2)	4.5 (114.3)	2.8 (71.1)	5.3 (134.6)	5.8 (147.3)	4.8 (121.9)	2.4 (61)	2.3 (58.4)	0.06 (1.5)
40	4 (101.6)	4.5 (114.3)	3.8 (96.5)	6.8 (172.2)	5.8 (147.3)	4.8 (121.9)	2.4 (61)	2.3 (58.4)	0.06 (1.5)

Flanged Meters

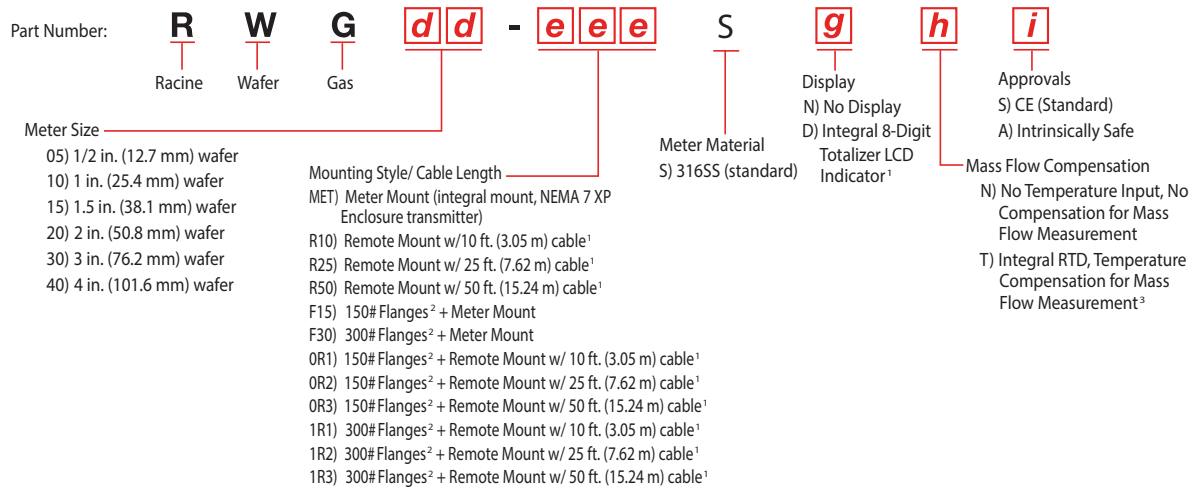
The 150 lb RF ANSI flange is standard. The 300 lb RF ANSI flange is optional.



Model	Size in. (mm)	A in. (mm)	B in. (mm)	C in. (mm)	D in. (mm)
RWG 05-F15	1/2 (12.7)	5.8 (147.3)	4.8 (121.9)	5.6 (142.2)	9.9...10 (251.5...254)
RWG 10-F15	1 (25.4)	5.8 (147.3)	4.8 (121.9)	5.8 (147.3)	9.9...10 (251.5...254)
RWG 15-F15	1-1/2 (38.1)	5.8 (147.3)	4.8 (121.9)	6.3 (160)	9.9...10 (251.5...254)
RWG 20-F15	2 (50.8)	5.8 (147.3)	4.8 (121.9)	5.9 (149.9)	9.9...10 (251.5...254)
RWG 30-F15	3 (76.2)	5.8 (147.3)	4.8 (121.9)	6.6 (167.6)	11.9...12 (302.3...304.8)
RWG 40-F15	4 (101.6)	5.8 (147.3)	4.8 (121.9)	7.5 (190.5)	11.9...12 (302.3...304.8)

PART NUMBER CONSTRUCTION

RWG Series Wafer Flow Meter for Gas



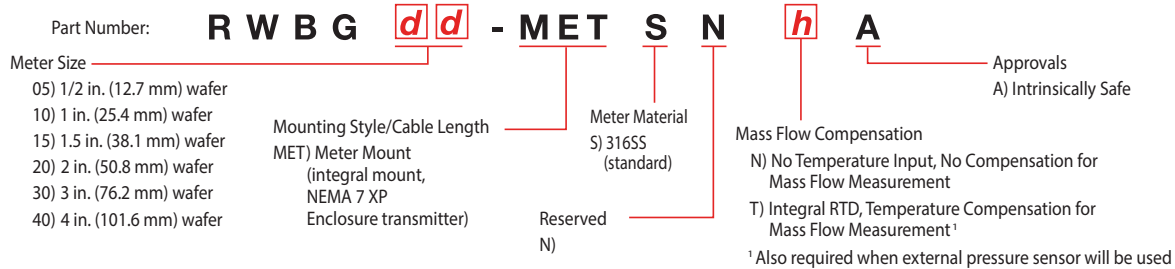
¹ Not available with Intrinsically Safe version

² Includes 1/4 in. NPT port (plugged) for external pressure sensor

³ Also required when external pressure sensor will be used

All meters include 4...20 mA output, HART communications protocol and NEMA 7 XP Transmitter Enclosure

RWBG Series Wafer Flow Meter for BioGas



Optimized for BioGas (CH₄ + CO₂) Applications

All meters include ATEX approval, 4...20 mA output and HART communications protocol

Control. Manage. Optimize.

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