VORTEX FLOW METER

VFM60 SERIES VORTEX FLOWMETER

Flow Measurement & Monitoring

DESCRIPTION

VFM60 is a powerful flow meter utilizing “Karman vortex” theory, which can meet the requirement of measuring the flow rate of various fluids such as gas, steam and liquid. The product has an excellent signal processing capability, with lower measuring limit, better stability and accuracy. The digital transmitter support communication via bluetooth and APP which allows users to access and diagnose the meter remotely, on a smart device. The unique dual-sensor design and special signal processing method eliminates vibration signals to provide a reliable performance. The VFM60 series is a highly customisable product, allowing upgrades and customisation according to specific requirements.

Process fluids: Liquid, natural gas, biogas, saturated steam, superheated steam applications, etc. Fluids must be homogeneous and single-phase.

Measurable parameter:
Standard version: Volume flow rate in pipe, velocity (Can measure mass flow rate, temperature and pressure if wired to separate RTD and pressure transmitter.)
Multi-variable version: Mass flow rate, volume flow rate in standard condition, temperature, pressure, volume flow rate in pipe, velocity.

FEATURES

- ✓ Easy installation and maintenance
- ✓ Self-diagnose function
- ✓ Unique dual-sensor technology
- ✓ Anti-vibration feature
- ✓ Self density calculation function (optional)
- ✓ Multi-variable version with built-in RTD and pressure sensor
- ✓ Unit selectable function
- ✓ Communication via bluetooth and APP (optional)
- ✓ Password protection

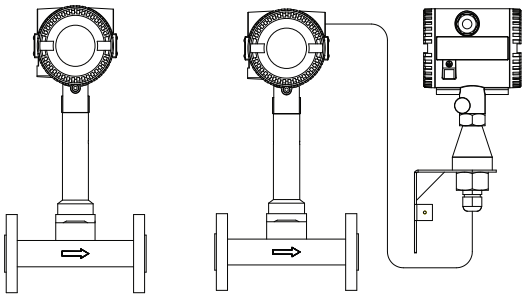
TECHNICAL FEATURES

Process connection	Flange: DN15 to DN300 (0.5” to 12”) Wafer: DN15 to DN300 (0.5” to 12”)
Sensor	Anti-vibration vortex sensor
Power supply	4 to 20mA (2 wire): 13.5 to 42V VFM60MV with 4 to 20mA (2 wire): 15.5 to 42V Modbus RTU: Current Iq <9mA 13.4 to 42V
Display	LED
Communication	HART (V5, V7) / Modbus-RTU / Pulse
Protection	Explosion proof

Medium temperature	Standard: -40 to 150°C Medium: -40 to 250°C High: -40 to 350°C
Flow rate (m3/h)	Liquid: ±0.75% RD (Re ≥ 20000) ±2% RD (10000 < Re < 20000) Gas/steam: ±1% RD (Re ≥ 20000) ±2% RD (10000 < Re < 20000)
Mass flow (kg/h)	Gas/steam: ±1.5% RD (Re ≥ 20000) ±2.5% RD (10000 < Re < 20000)
Repeatability	±0.3%
Gas turndown ratio	1:30
Steam turndown ratio	1:35
Liquid turndown ratio	1:10
Upstream/downstream	15xD / 5xD
Viscosity allowance	DN15: ≤ 4mPas DN25: ≤ 5mPas DN40 to DN300: ≤ 7mPas
Pressure allowance	1.6MPa (232 psiG) 2.5MPa (362 psiG) 4.0MPa (580 psiG) 6.3Mpa (913 psiG)

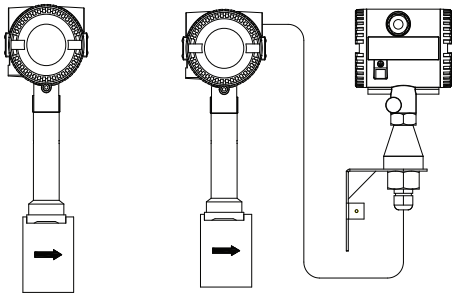
INSTALLATION METHODS

Standard model - Flange type



Integral mounting Remote mounting

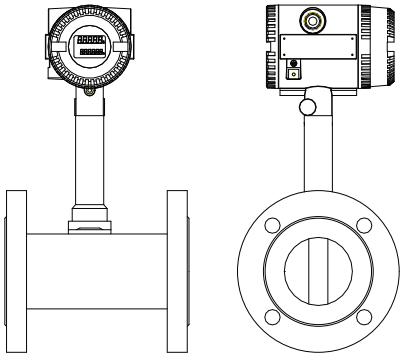
Standard model - Wafer type



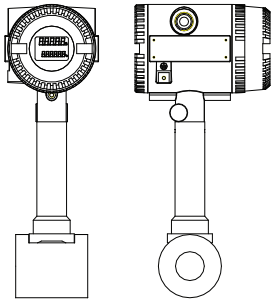
Integral mounting Remote mounting

DIMENSION/DRAWING

Standard Model

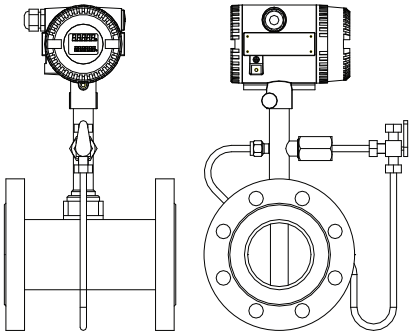


Flange Type

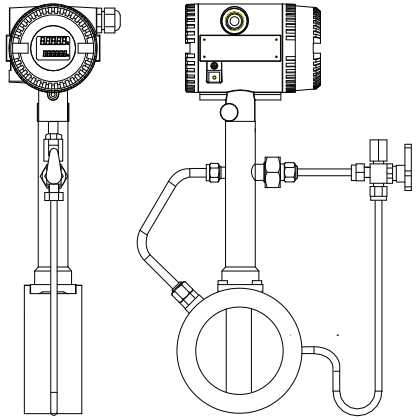


Wafer Type

Multi-variable Model

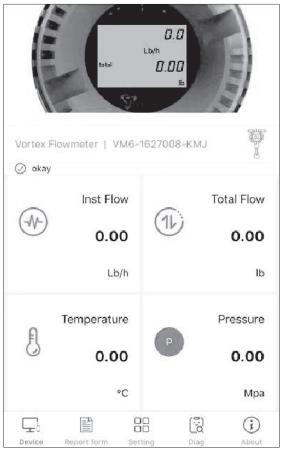


Flange Type



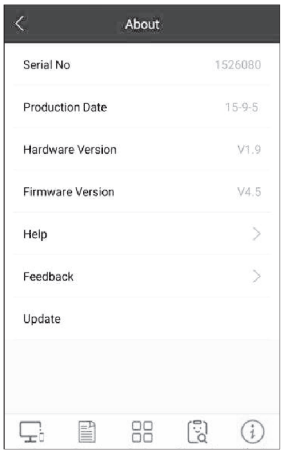
Wafer Type

BLUETOOTH & APP FUNCTION



APP Interface

Device List



Setting Interface

Remote Diagnosis Interface

MODEL SELECTION

Ordering code format VFM60MV - 2WC - 1NN - ML1 - MN - XXX

	Description	Model	X	XX	X	X	X	X	X	X	XXX
Model	Vortex mass flowmeter with integral RTD and pressure sensor	VFM60MV									
	Vortex flowmeter without integral RTD and pressure sensor	VFM60N									
Fluid Type	Liquid		1								
	Gas (Standard)		2								
	Steam		3								
Process Connection	Insertion (only for DN300 to DN1000 or 12 inch to 40 inch)			IN							
	Wafer with carbon steel flanges up to 16 barG (232 psiG) (DN15 to DN300) (Standard)			WC							
	Wafer with stainless steel flanges up to 16 barG (232 psiG) (DN15 to DN300)			WF							
	Flanged DIN PN16 up to 16 barG (232 psiG) (DN15 to DN300)			D1							
	Flanged DIN PN25 up to 25 barG (362 psiG) (DN15 to DN300)			D2							
	Flanged DIN PN40 up to 40 barG (580 psiG) (DN15 to DN300)			D3							
	Flanged DIN PN63 up to 63 barG (913 psiG) (DN15 to DN300)			D4							
	Flanged ANSI CL150 up to 16 barG (232 psiG) (0.5 inch to 12 inch)			C1							
	Flanged ANSI CL300 up to 40 barG (580 psiG) (0.5 inch to 12 inch)			C2							
	Flanged ANSI CL400 up to 63 barG (913 psiG) (0.5 inch to 12 inch)			C3							
	JIS 10K up to 16 barG (232 psiG) (DN15 to DN300)			J1							
	JIS 20K up to 40 barG (580 psiG) (DN15 to DN300)			J2							
	JIS 30K up to 63 barG (913 psiG) (DN15 to DN300)			J3							
Wetted part Material	OCr18Ni9 SS304 (Standard)				1						
	SS316				2						
	Other				Q						
Degreased	Wet part not degreased (Standard)					N					
	Wet part degreased for Oxygen measurement					D					
Medium Temperature	T≤150°C (Standard)						N				
	T≤250°C (wafer or flanged)						S				
	T≤350°C (wafer or flanged)						H				
Transmitter	Integral transmitter, multi-variable, bluetooth, RS485, pulse (Standard)							ML1			
	Integral transmitter, multi-variable, bluetooth, pulse, 4 wire 4 to 20mA							ML2			
	Integral transmitter, multi-variable, bluetooth, RS485, pulse, 4 wire 4 to 20mA							ML3			
	Integral transmitter, multi-variable, bluetooth, pulse, 4 wire HART@4 to 20mA							ML4			
	Integral transmitter, multi-variable, pulse, 2 wire 4 to 20mA							ML5			
	Integral transmitter, multi-variable, pulse, 2 wire HART@4 to 20mA							ML6			
	Remote transmitter (dual display), multi-variable, bluetooth, RS485, pulse							MR1			
	Remote transmitter (dual display), multi-variable, bluetooth, RS485, pulse, 4 wire 4 to 20mA							MR2			
	Integral transmitter, bluetooth, RS485, pulse							NL1			
	Integral transmitter, bluetooth, pulse, 4 wire 4 to 20mA							NL2			
	Integral transmitter, bluetooth, RS485, pulse, 4 wire 4 to 20mA							NL3			
	Integral transmitter, bluetooth, pulse, 4 wire HART@4 to 20mA							NL4			

...To be continued...

MODEL SELECTION

...continued...

	Description	Model	X	XX	X	X	X	X	X	X	XXX
Transmitter (cont.)	Integral transmitter, pulse, 2 wire 4 to 20mA							NL5			
	Integral transmitter, pulse, 2 wire HART@4 to 20mA							NL6			
	Remote transmitter (dual display), bluetooth, RS485, pulse							NR1			
	Remote transmitter (single display) , bluetooth, pulse, 4 wire 4 to 20mA							NR2			
	Remote transmitter (dual display) , bluetooth, RS485, pulse, 4 wire 4 to 20mA							NR3			
	Remote transmitter (single display) , bluetooth, pulse, 4 wire HART@4 to 20mA							NR4			
	Remote transmitter (single display) , pulse, 2 wire 4 to 20mA							NR5			
	Remote transmitter (single display) , pulse, 2 wire HART@4 to 20mA							NR6			
Cable Grinder	M20x1.5 (Standard)								M		
	NPT 1/2								N		
Ex-Proof	No Ex-proof (Standard)									N	
	NEPSI Ex d IIC T3 Gb									1	
Pipe Size	DN15 or 0.5 inch										015
	DN20 or 0.75 inch										020
	DN25 or 1 inch										025
	DN32 or 1.25 inch										032
	DN40 or 15 inch										040
	DN50 or 2 inch										050
	DN65 or 2.5 inch										065
	DN80 or 3 inch										080
	DN100 or 4 inch										100
	DN125 or 5 inch										125
	DN150 or 6 inch										150
	DN200 or 8 inch										200
	DN250 or 10 inch										250
	DN300 or 12 inch										300