FD-G80

Clamp-On Gas Flow Meter DN 65A/80A

*Please note that accessories depicted in the image are for illustrative purposes only and may not be included with the product.

Specifications

Model		FD-G80
Pipe size	DN (Diameter Nominal)	65 A, 80 A
	NPS (Nominal Pipe Size)	2 1/2", 3"
	Outer diameter of pipe	ø72 to 78 mm 2.83" to 3.07", ø86 to 92 mm 3.39" to 3.62"
	Pipe thickness	2.9 to 6.3 mm 0.114" to 0.25"
Supported pipe materials		Iron, steel, stainless steel
Supported fluids		Air, Nitrogen, other gases*1
Fluid temperature		0 to 60ºC 32 to 140 °F
Recommended pressure		0.4 MPa or greater (58 PSI or greater)
Rated velocity of flow range		Up to 15 m/s
Actual flow rate range (typical)	m^3/h	Pipe size 65 A: 200.0 Pipe size 80 A: 280.0
	L/min	Pipe size 65 A: 3300 Pipe size 80 A: 4600
	CFM	Pipe size 65 A: 120.00 Pipe size 80 A: 160.00
Standard flow rate range (typical) [CFM]	20°C 68°F 60 psi 0.41 MPa	Pipe size 65 A: 568.43 Pipe size 80 A: 757.91
	20°C 68°F 80 psi 0.55 MPa	Pipe size 65 A: 720.64 Pipe size 80 A: 960.85
	20°C 68°F 100 psi 0.69 MPa	Pipe size 65 A: 872.84 Pipe size 80 A: 1163.79
	20°C 68°F 120 psi 0.83 MPa	Pipe size 65 A: 1025.05 Pipe size 80 A: 1366.73
Display		QVGA 2.2" LCD color monitor
Display update cycle		Approx. 3 Hz
Display resolution	Instantaneous flow rate	0.1 m^3/h, 1 L/min, 0.01 CFM
	Consumption/leakage amount	0.01 m^3, 1 L, 1 CF
Response time		1.0 s/2.5 s/5.0 s/10.0 s/30.0 s/60.0 s/120.0 s/200.0 s (variable)
Measurement accuracy	Between 10 and 100% of F.S.	±2.0% of RD*2*3*4*5
	Between 1 and 10% of F.S.	±1.0% of F.S.*2*3*4*5
Zero point error		±0.15% of F.S.*2*6
Static leakage repeatability		±1.0% of RD*4*7
Hysteresis		Variable
Flow units		CFM(S), CFM, m^3/h (N), m^3/h (S), m^3/h, L/min (N), L/min (S), L/min
I/O wiring connection port		M12 4-pin connector (male)
Detection mode (switchable)	ch.1	Instantaneous flow mode/area mode/pulse (+) mode/integrated flow mode/ warning mode (consump)*8

	ch.2		Instantaneous flow mode/area mode/pulse (−) mode/warning mode (leak)/ error output mode/analog output/integrated flow reset/flow rate zero input/origin adjustment input*8
Standard I/O (switchable)	Control output (ch.1/ch.2)		NPN/PNP setting switchable, open collector output 30 VDC or less, max. 100 mA/ ch, residual voltage: 2.5 V or less
	Analog output (ch.2)		4 to 20 mA/0 to 20 mA, load resistance: 500 Ω or less
	External input (ch.2)		Short-circuit current: 1.5 mA or less, input time: 20 ms or more
Protection circuit			Power supply reverse connection protection, power supply surge protection, short-circuit protection for each output, surge protection for each output
Analog input (for volume conversion)			M8 4-pin connector (female), analog current input (4 to 20 mA), input resistance: 100Ω or less
Power supplied to pressure sensor			Supply voltage: Equivalent to voltage applied to the FD-G, Supply current:70 mA or less (analog output of the pressure sensor included)
Communication interface	USB		USB 2.0
	Ethernet	Standard	IEEE 802.3u (100BASE-TX)
		Transmission rate	100 Mbps
		Cable	Category 5 or higher STP (shielded twisted pair) or UTP (unshielded twisted pair) cable
		Connector	M12 connector (female, D-code)
Network function			Modbus TCP, EtherNet/IP™, IO-Link*9
Recording capacity	Consumption amount/ leakage amount		Approx. 5 years
	Events		100
Power supply	Power voltage		20 to 30 VDC including 10% ripple (P-P), Class 2
	Power consumption		350 mA or less at 20 V, 290 mA or less at 24 V, 230 mA or less at 30 V (load current excluded) (analog output of the pressure sensor excluded), 550 mA or less at 20 V, 490 mA or less at 24 V, 430 mA or less at 30 V (Maximum load current excluded) (analog output of the pressure sensor excluded)
Environmental resistance	Enclosure rating		IP65/67 (IEC 60529)*10
	Ambient temperature		Detection head: −10 to +60°C 14 to 140°F (no freezing), display unit: −10 to +55°C 14 to 131°F (no freezing)
	Relative humidity		5 to 85%RH (no condensation)
	Vibration resistance		10 to 500 Hz, power spectral density: 0.816 G^2/Hz, XYZ axes
	Shock resistance		100 m/s^2, 16 ms pulse, XYZ axes, 1000 times for each axis
Material	Display unit		Body: PBT + coating, display: PMMA, Power supply port: SUS304-equivalent, Ethernet port: zinc nickel plating
	Detection head		Body: PPS/SUS304, rear surface: rubber
	Mounting/damping bracket		SUS304
Weight			Approx. 3.6 kg

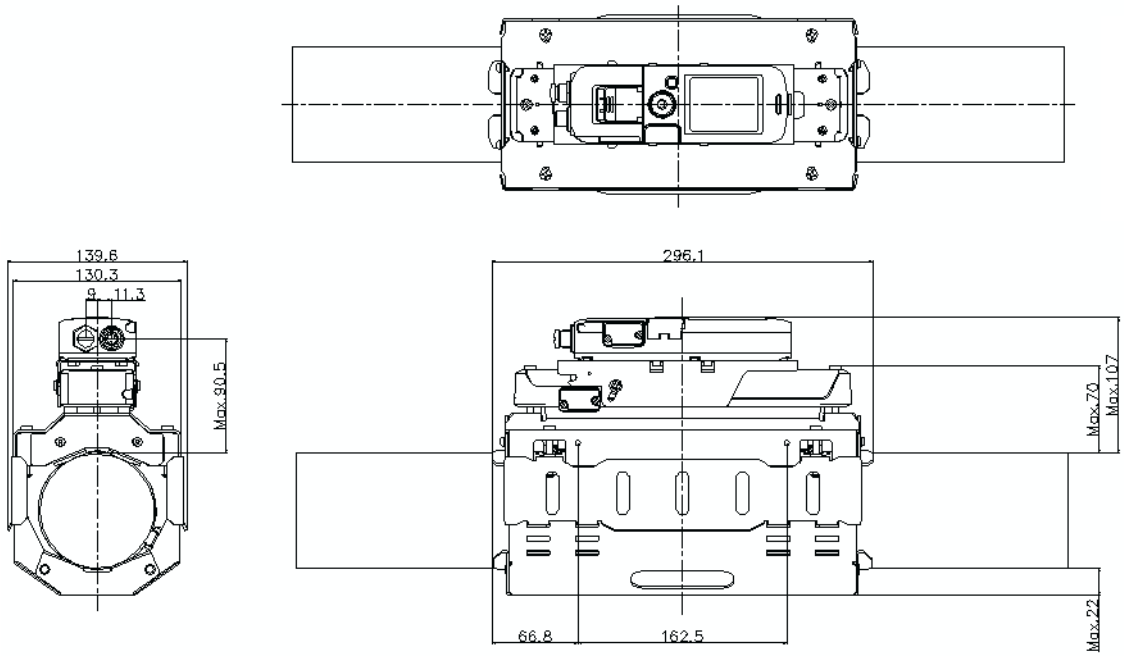
*1 The gas must be uniform and capable of transmitting ultrasonic waves. Measurement may be unstable due to the pressure inside of the pipe and the type of gas.
*2 This value is guaranteed by KEYENCE inspection facilities. Errors will be introduced by factors such as the type and status of the pipe and the type and temperature of the gas.
*3 This is the value when considering linearity + span error in a stable environment with a temperature of 25°C 77°F.
*4 Defined with stable velocity of flow distribution. Does not include pulsations and fluctuations in the velocity of flow distribution primarily attributable to the equipment.
*5 The linearity error characteristic due to the pipe is not included in this value.
*6 It is possible to reduce zero point errors by performing an origin adjustment.
*7 This is the value within the range where measurement accuracy is guaranteed.
*8 When Bi-directional is specified, the following functions cannot be used. The selection of the comparison view/leak ratio view/static leakage, the measurement/display of the leakage amount/integrated flow, the setting of the target value/warning set value, and money conversions. Also, the I/O settings are limited as shown below.
• ch.1: Pulse(+) mode
• ch.2: Pulse(-) mode, Error output mode, Integrated flow reset, Flow zero input, Origin adjustment input
*9 IO-Link: Compatible with specification v1.1/COM1 (4.8 kbps). IO-Link is a trademark or registered trademark of PROFIBUS Nutzerorganisation e.V. (PNO).

*10 The IP65/67 enclosure rating is lost when a USB connection is established.

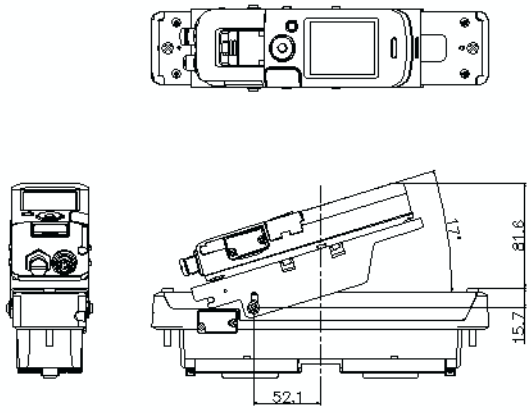
Dimensions

* Download CAD file or product manual for larger image/text and more detail.

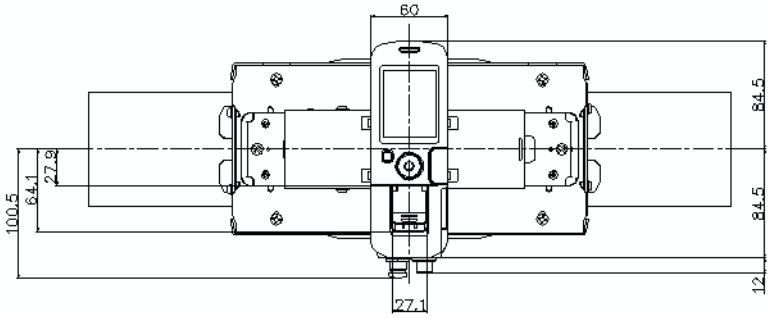
FD-G80



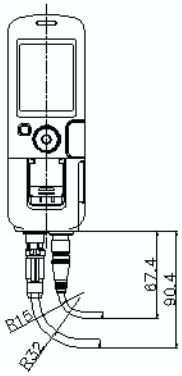
When the angle of the display unit is changed



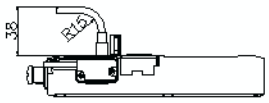
When FD-G is installed as horizontal integrated system



When power supply and Ethernet cable are connected



When USB cable is connected



When M8 connector cable is connected