



FD-G25L
Clamp-On Gas Flow Meter DN 20A/25A



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

Specifications

| | | |
|--|-----------------------------|--|
| Model | | FD-G25L |
| Pipe size | DN (Diameter Nominal) | 20 A, 25 A |
| | NPS (Nominal Pipe Size) | 3/4", 1" |
| | Outer diameter of pipe | ø25 to 29 mm 0.98" to 1.14", ø32 to 36 mm 1.26" to 1.42" |
| | Pipe thickness | 1.5 to 3.0 mm 0.06" to 0.118" |
| Supported pipe materials | | Iron, steel, stainless steel |
| Supported fluids | | Air, Nitrogen, other gases*1 |
| Fluid temperature | | 0 to 60°C 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) | m³/h | Pipe size 20 A: 20.00 Pipe size 25 A: 32.00 |
| | L/min | Pipe size 20 A: 330.0 Pipe size 25 A: 540.0 |
| | CFM | Pipe size 20 A: 12.00 Pipe size 25 A: 19.00 |
| Standard flow rate range (typical) [CFM] | 20°C 68°F 60 psi 0.41 MPa | Pipe size 20 A: 56.84 Pipe size 25 A: 90.00 |
| | 20°C 68°F 80 psi 0.55 MPa | Pipe size 20 A: 72.06 Pipe size 25 A: 114.10 |
| | 20°C 68°F 100 psi 0.69 MPa | Pipe size 20 A: 87.28 Pipe size 25 A: 138.20 |
| | 20°C 68°F 120 psi 0.83 MPa | Pipe size 20 A: 102.50 Pipe size 25 A: 162.30 |
| Display | | QVGA 2.2" LCD color monitor |
| Display update cycle | | Approx. 3 Hz |
| Display resolution | Instantaneous flow rate | 0.01 m³/h, 0.1 L/min, 0.001 CFM |
| | Consumption/leakage amount | 0.001 m³, 1 L, 0.1 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, m³/h (N), m³/h (S), m³/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. 2.2 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

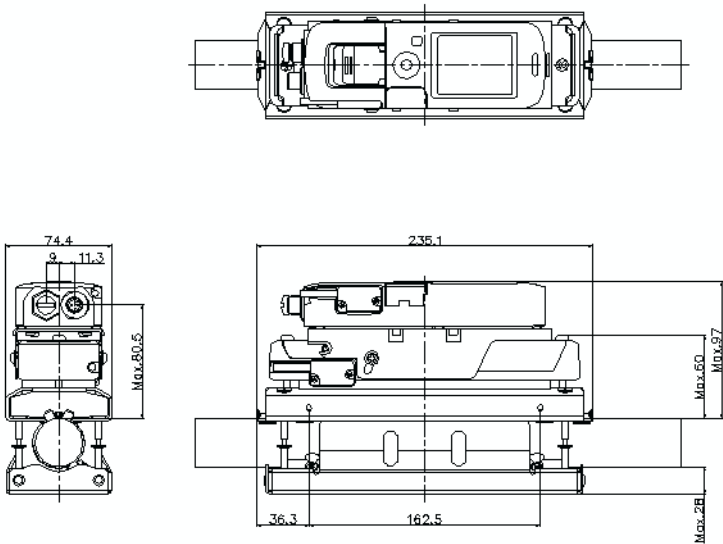
*⁹ IO-Link: Compatible with specification v1.1/COM1 (4.8 kbps). IO-Link is a trademark or registered trademark of PROFIBUS Nutzerorganisation e.V. (PNO).

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

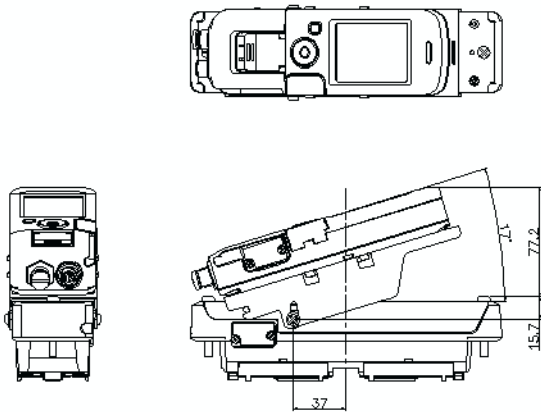
Dimensions

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

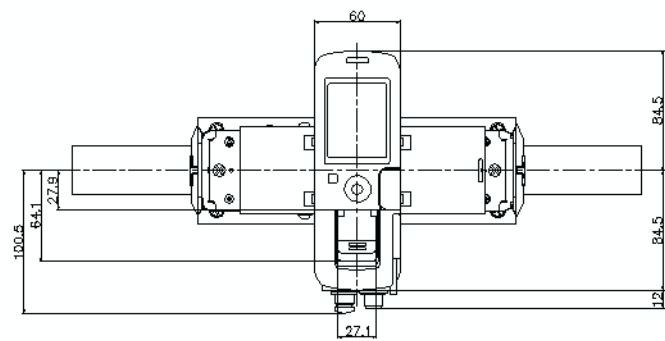
FD—G25



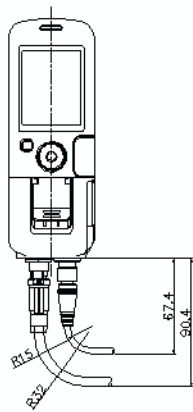
When the angle of the display unit is changed



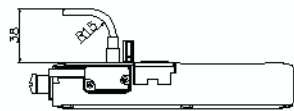
When FD-G is installed as horizontal integrated system



When power supply and Ethernet cable are connected



When USB cable is connected



When M8 connector cable is connected

