

2. Electrical specifications

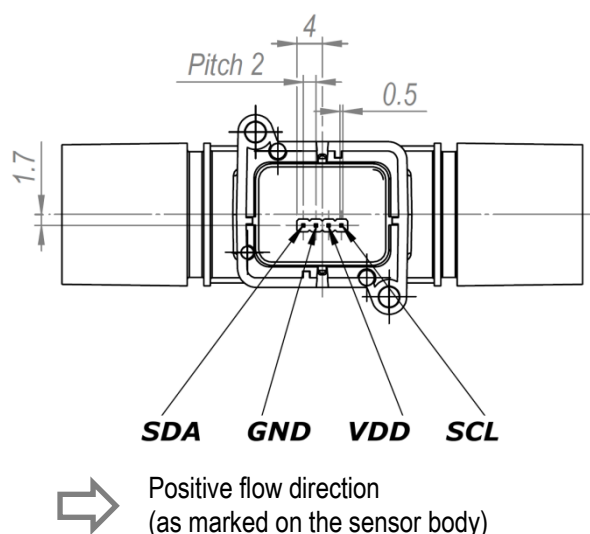
2.1 Electrical characteristics

Electrical properties	Condition	Value		Unit
Interface		I ² C		
Default Sensor Address		64 (0x40)		
Soft Reset Time		80		ms
Start-up Time ¹²	Max.	100		ms
Supply Voltage (VDD)		5V +/-5%		V
I ² C Communication Level	High Low	Min. 2.5 GND	Max. VDD 1.1	V
I ² C Bus clock frequency	Max.	400		kHz
Power Consumption		< 50		mW
Electrical Connector		2 mm pitch, 4 pins in a row		
Output signal resolution		14 ¹³		bit
Scale Factor Flow	Air, N2 O2	140 142.8		1/slm
Offset Flow		32'000		

¹² After 4.75V is reached

¹³ 16 bit with two least significant bits always zero

2.2 Pin layout and mechanical concept of the electrical connection



The SFM3000 is designed for both connector attachment and through-hole technology hand-soldering to a PCB.

2.2.1 Connector attachment

The SFM3000 sensor's 4-pin 2 mm pitch electrical connector is compatible with Molex DuraClik™ socket (Molex product number: 502351-0400). For this type of

connection please order the SFM3000 with a cap (according to the ordering information in Chapter 5). Diverse 4-core flat ribbon cables with crimp fittings can be used for electrical connection.

2.2.2 PCB soldering

Standard selective soldering systems may be used for soldering SFM3000 sensors. Reflow soldering is not feasible and may damage the sensor. The sensor ports must be protected from solder splash and flux during soldering. The characteristics of selective soldering machines vary, so any soldering setup must be tested before production use.

2.3 Conversion to physical values

In order to obtain the measured flow in [slm], the measured value needs to be converted using the following formula:

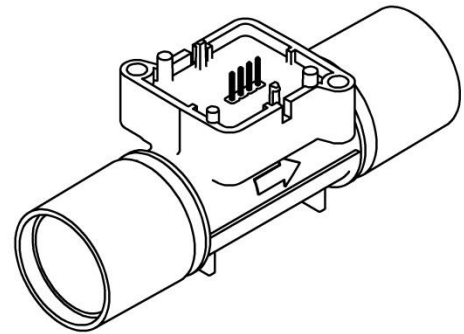
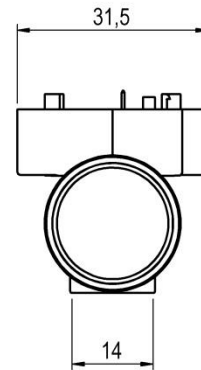
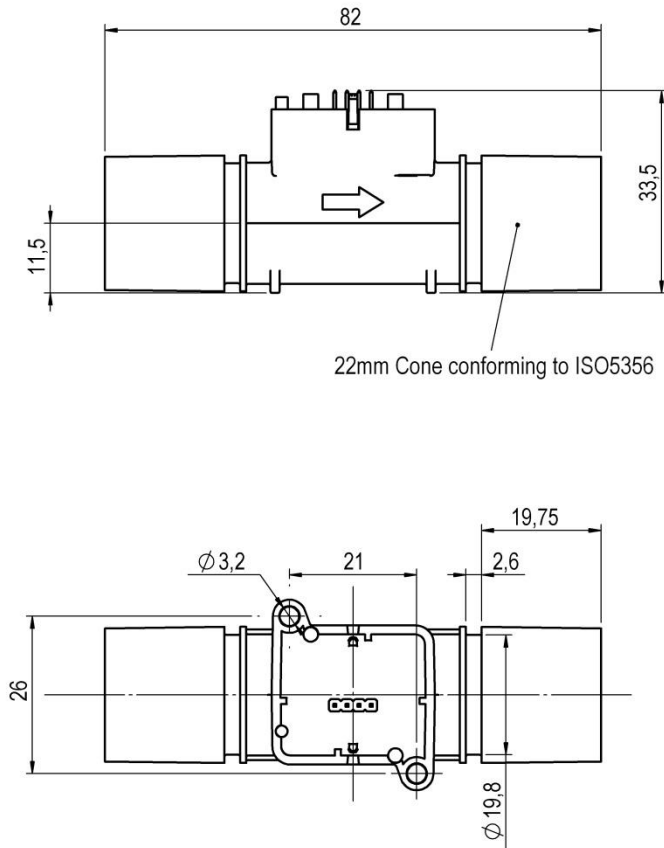
$$flow [slm] = \frac{measured\ value - offset\ flow}{scale\ factor\ flow}$$

Please note that the first measurement performed directly after chip initialization is not valid.

3. Mechanical specifications

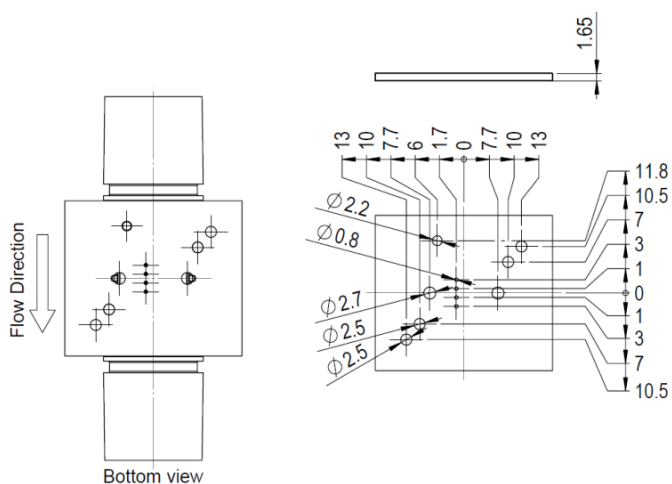
All dimensions are in millimeters (mm).

3.1 SFM3000 without cover (PCB mount)



3.2 Footprint

Please refer to the mask given below for reliable PCB attachment using the dedicated snap-in feet. Consider using the screw holes of the SFM3000 for a sturdy integration of the sensor.



3.3 SFM3000 with cover

If used with cover, sensor height is 34.4 mm instead of 33 mm. All the other dimensions are the same

