

Tylan FC-280SA/FM-380SA Mass Flow Controllers and Flowmeters

Low-cost, premium quality elastomer-sealed mass flow controllers and meters



Process Values

Designed to meet the exacting requirements of semiconductor processes and equipment, the Tylan FC280SA and FM380SA models are premium quality elastomer-sealed mass flow controllers and meters. These MFCs combine proven components and techniques with innovative concepts in both mechanical and electrical design.

Feature

- Accuracy
- Fast setpoint response
- 10 sccm to 30 slpm N2
- 0 - 5 VDC signals
- Resistant to contamination clogging
- Adjustable, normally - closed solenoid valve
- Corrosion resistant materials

Product Features

Product Benefits

Accuracy

Tylan General's thermal differential flow sensor provides highly accurate and repeatable mass measurement of gas flow. Because the sensor measures the mass flow of gas, it is independent of pressure and temperature changes. This ensures that flows are consistent in different systems or locations.

Fast setpoint Response Time

The flow sensing circuitry in the FC-280SA provides response to setpoint changes as fast as 0.5 seconds, which is crucial for short process cycles. The settling time to 2% of setpoint is less than two seconds.

Temperature Coefficients

Maintains tight control in varying temperatures

Balanced Power Load

Low lead current eliminates signal differing from its controlling device

Power Operation

Insensitive to power supply variations, and will operate within ± 12 volts to ± 18 volts

Standard Design

Industry standard pinouts and dimensions make the Tylan FC2900 easy to install in many systems

Tylan FC280SA/FM-380SA MFCs and Flowmeters - Ordering Information

Performance

Full Scale (N2 equivalent)	10 sccm – 30 slpm
Shutdown	2% full scale
Step Response Time	1 sec (dependent on step request and conditions)
Accuracy	± 1.0% full scale
Linearity	± 0.5% full scale
Repeatability	± 0.2% full scale
Pressure Coefficient	0.00001% per bar, 0.007% per psi (typical)
Temperature Coefficient	0.1% per °C full scale (zero and span)
Attitude Sensitivity	< 0.25% @ 90° C

Mechanical

Valve	normally-closed solenoid
Materials	316L stainless steel, 446 stainless steel, PFA Teflon®
Elastomers Available	Viton®, Kalrez®, Neoprene
Leak Integrity	1 x 10 ⁻⁹ atm-cc per sec (He) inboard <2% full scale with Teflon poppet (normally-closed) <5% full scale with Teflon poppet (normally-open)
Weight	0.98 Kg (2 lb)

Electrical

Supply Voltage	± 12 VDC to ± 18 VDC
Supply Current	150 mA nominal
Power Consumption	3.3 watts @ ± 15 volts
Input/Output Signal	0-5 VDC

Environmental

Operating Temperature	5 – 50° C (ambient and gas)
Humidity	0 – 95% RH, non-condensing
Maximum Inlet Pressure	11.5 bar (150 psig)
Differential Pressure	Nominal, 0.7 – 2.8 bar (10-40 psid)

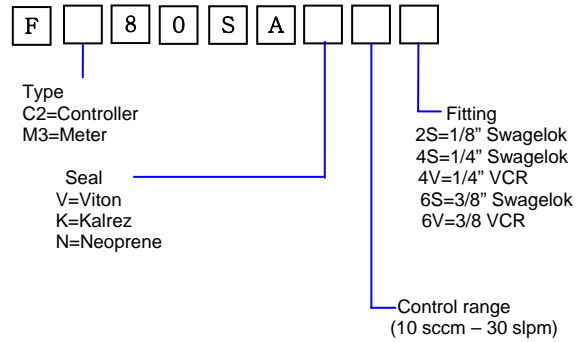
Note: In accordance with SEMI Standard E12-91, Standard Temperature is 0° C and Standard Pressure is 760 mm Hg (14.7 psia).

Electrical Connection

	Card Edge	15-Pin "D"	9-Pin "D"		Card Edge	15-Pin "D"	9-Pin "D"
+ 15 VDC	4			Az INHIBIT	J		
COMMON	C			VALVE TEST (± 15 VDC)	D		
-15 VDC	F			VALVE OFF	L		
0-5 V Out	3			OVERRIDE			
COMMON	2			4-20 mA IN			
0-5 V IN	A			4-20mA OUT			
COMMON	8			CASE GND	1		
V REF	6			VALVE VOLTAGE			
PRESS. IN	5			(0-7 VDC)			
Az STORE	K						

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Dimensions

