

# Tylan FC-2900/FM-3900

## 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 FC2900 and FM3900 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.

### Product Features

Autozero Digital Circuitry

User-Selectable Response Time  
Option

Temperature Coefficients

Balanced Power Load

Power Operation

Standard Design

### Product Benefits

Automatically resets outputs to zero under no flow conditions, and shifts the entire calibration curve to cancel many effects of temperature coefficients and calibration drift.

Offers a quick (0.5 second) step response time in short-cycle processes along with offering a controlled response for long processes.

Maintains tight control in varying temperatures

Low lead current eliminates signal differing from its controlling device

Insensitive to power supply variations, and will operate within  $\pm 12$  volts to  $\pm 18$  volts

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

# Tylan FC-2900/FM-3900 MFCs and Flowmeters - Ordering Information

## Performance

Full Scale (N2 equivalent)	FC2900: 10 sccm – 10 slpm FC2910: 100 sccm – 50 slpm (FC2910 used below 10 slm for low vapor pressure material delivery)
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	0.05% per °C (zero and span)
Attitude Sensitivity	< 0.25% @ 90° C without autozero

## Mechanical

Valve	Normally-open or normally-closed solenoid
Materials	316L stainless steel, 446 stainless steel, PFA Teflon®
Elastomers Available	Viton®, Kalrez®, Neoprene
Leak Integrity	1 x 10 <sup>-9</sup> 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	9110 mA nominal (125 mA max @ ± 18 VDC)
Power Consumption	3.3 watts @ ± 15 volts
Input/Output Signal	0-5 VDC

## Environmental

Operating Temperature	5 – 50° C (ambient and gas)
Humidity	0 – 90% RH, non-condensing
Maximum Inlet Pressure	11.5 bar (150 psig)
Differential Pressure	Nominal, 0.7 – 2.8 bar (10-40 psid)

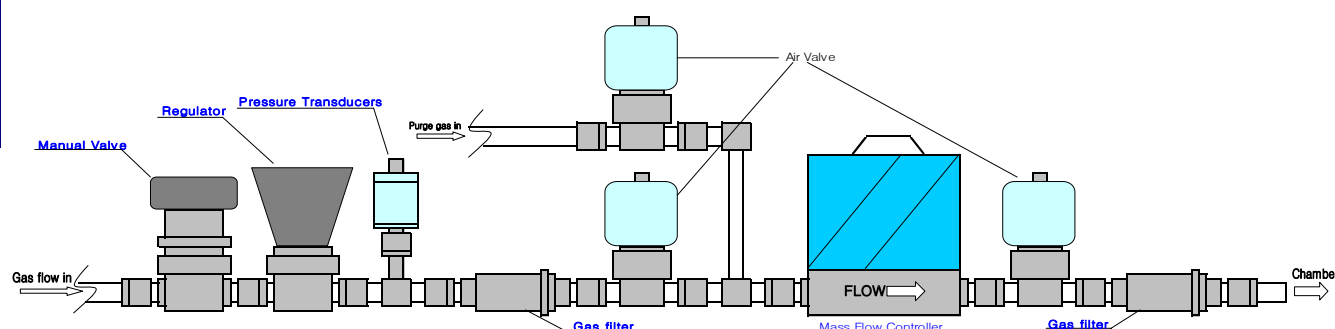
Note: In accordance with SEMI Standard E12-91, Standard Temperature is 0° C and Standard Pressure is 760 mm Hg (14.7 psia).

## Electrical Connection

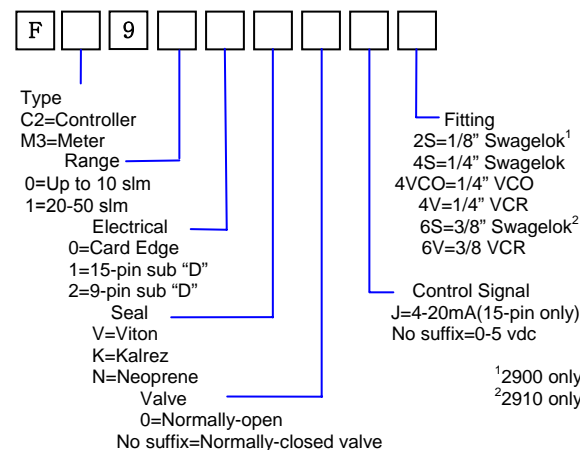
	Card Edge	15-Pin "D"	9-Pin "D"		Card Edge	15-Pin "D"	9-Pin "D"
+ 15 VDC	4	5	3	Az INHIBIT	J	3	
COMMON	C	10	4	VALVE TEST (± 15 VDC)	D	12	8*
-15 VDC	F	6	5	VALVE OFF	L	15	
0-5 V Out	3	2	2	OVERRIDE			1
COMMON	2	1	7	4-20 mA IN		7	6*
0-5 V IN	A	8	6	4-20mA OUT		4	2*
COMMON	8	9	8	CASE GND	1	14	9*
V REF	6	11		VALVE VOLTAGE (0-7 VDC)			8*
PRESS. IN	5	3	9*				
Az STORE	K						

Consult our applications specialists with any questions. \* Optional Kalrez and Viton are trademarks of DuPont Dow Elastomers, L.L.C. Swagelok is a trademark of Crawford Fitting Company. Teflon is a trademark of E. I. du Pont de Nemours and Company VCO and VCR are trademarks of Cajon Company

## Gas Panel Drawing



## FC-2900/FM-3900 Ordering Information



## FC-2900/FM-3900 Dimensions

