

Tylan FC-2925/FM-3925

Mass Flow Controllers and Flowmeters

Provides accurate and reliable measurement and control up to 1000 slm (2100 scfh)



Process Values

The Tylan FC2925 mass flow controllers accurately and reliably measure and control the mass flow rate of gases up to 1000 slm (2100 scfh) of nitrogen equivalents. The Tylan FM3925 mass flowmeters operate over the same flow range and at pressures up to 500 psig.

The Tylan FC2925 MFC and Tylan FM3925 flowmeter are equipped with a card edge connector. The Tylan FC2926 MFC and Tylan FM3926 flowmeter are available with a 15-pin subminiature D connector and optional 4 - 20 mA DC input and output signals, 0 - 5 VDC is standard.

The Tylan FC2925 mass flow controller consists of a thermal gas flow sensor, bypass flow splitter, pilot-operated control valve and electronics.

Features

Gas Flow to 1000 slpm N₂

Fast response to setpoint command

Normally closed solenoid control valve

Autozero circuit

Optional 15 pin D connector with 4-20 mA DC signals

All stainless steel

Product Features

Thermal Gas Flow Sensor

Bypass Flow splitter

Solenoid control valve

Product Benefits

The Tylan FC2925 measures gas flow rates using Tylan's patented temperature differential sensing device. The temperature difference of gas flowing past two heated, resistive temperature sensors is directly proportional to the mass flow rate of the gas. An insulated small diameter capillary is used in the sensing element which greatly reduces variations with attitude. This allows the Tylan FC2925 MFC and the Tylan FM3925 flowmeter to be mounted in any position.

The bypass flow splitter smooths the primary gas flow into the laminar flow region and produces sufficient pressure drop to divert a small portion of gas into the thermal sensor. The flow range is factory set by adjusting the position and size of the stainless steel bypass

The control mechanism in the flow controller uses a solenoid valve as a pilot to control a process gas-actuated bellows valve. The valve provides fast response is easily adjusted and has less than 5% shutoff capability. The bellows constructed of 350 stainless steel, uses the process gas to open and close the control valve

Tylan FC-2925/FM-3925 MFCs and Flowmeters - Ordering Information

Performance

Full Scale (N2 equivalent)	300 slpm – 1000 slpm
Turndown Ratio	20:1
Step Response Time	5 sec (dependent on step response and conditions)
Accuracy	± 2.0% full scale (up to 300 slm) ± 3.0% full scale (up to 1000 slm)
Linearity	± 1% full scale
Repeatability	± 0.5% full scale
Pressure Coefficient	0.00001% per bar, 0.007% per psi (typical)
Temperature Coefficient	0.01% per °C (zero and span)
Attitude Sensitivity	< 0.25% @ 90° C without autozero

Mechanical

Valve	Normally-closed Operated Bellows Valve
Materials	316L stainless steel, AM350SS, 446SS
Leak Integrity	1 x 10 ⁻⁹ atm-cc per sec (He) inboard <4% full scale with Teflon poppet (normally-closed)
Weight	2.5 Kg (5.5 lb)

Electrical

Supply Voltage	± 12 VDC to ± 18 VDC
Supply Current	110 mA (125 mA max @ ± 18 VDC) / FC-2925/26
Power Consumption	3.3 watts @ ± 15 volts
Input/Output Signal	0-5 VDC
Option(15pin D sub)	4-20mA DC (FC-2926 only)
Supply Current	35 mA (40 mA max @ ± 18 VDC) / FM-3925/26

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	200-300 slpm :30-60 psid 301-1000 slpm 40-80 psid

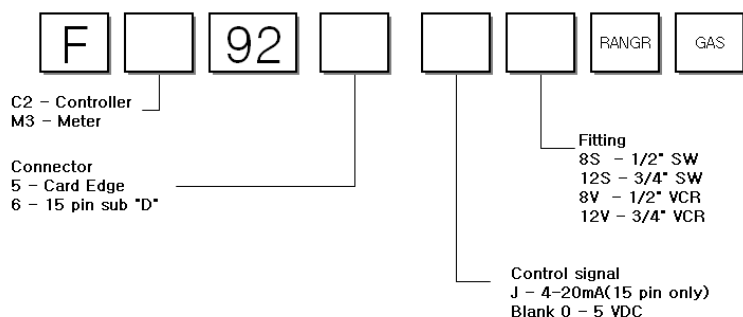
Note: In accordance with SEMI Standard E12-91, Standard Temperature is 0° C and Standard Pressure is 760 mm Hg (14.7 psia).

Electrical Connection

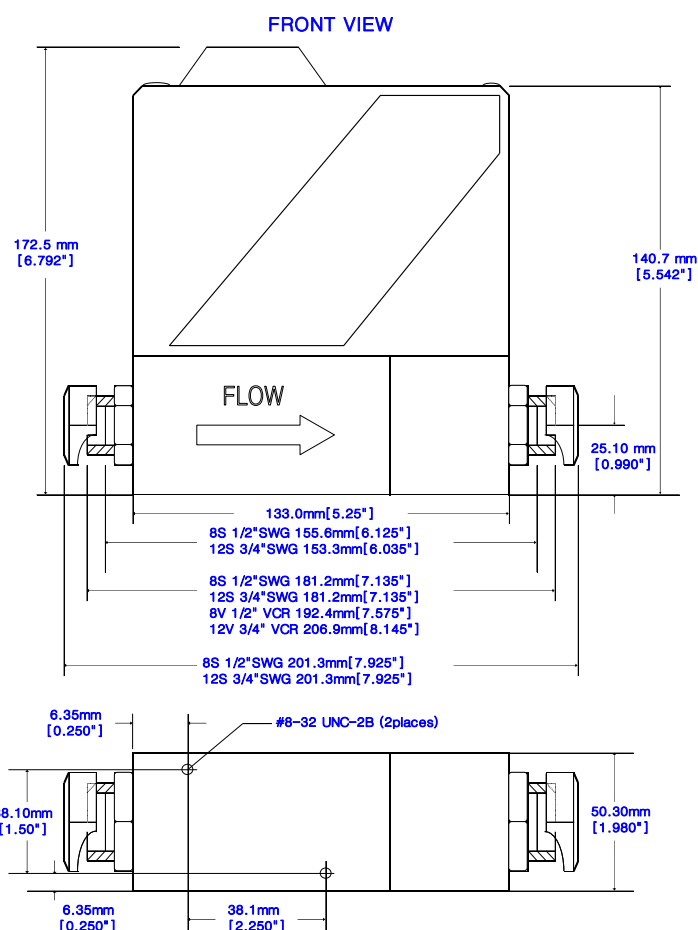
	Card Edge	15Pin "D"	9Pin "D"		Card Edge	15Pin "D"	9Pin "D"
+ 15 VDC	4	5		Az INHIBIT	J	3	
COMMON	C	10		VALVE TEST (± 15 VDC)	D	12	
-15 VDC	F	6		VALVE OFF	L	15	
0-5 V Out	3	2		OVERRIDE			
COMMON	2	1		4-20 mA IN		7	
0-5 V IN	A	8		4-20mA OUT		4	
COMMON	8	9		CASE GND	1	14	
V REF	6	11		VALVE VOLTAGE (0-7 VDC)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

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FC-2925/FM-3925 Ordering Information



FC-2925/FM-3925 Dimensions



Gas Panel Drawing

